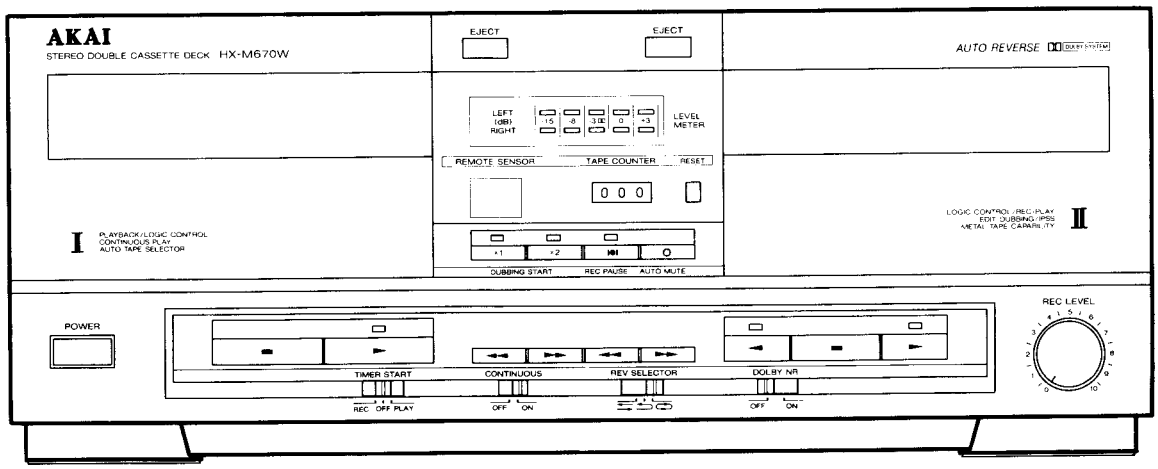
HX-M670W

AKAI SERVICE MANUAL



STEREO DOUBLE CASSETTE DECK

MODEL HX-M670W

SPECIFICATIONS

Track system	4 track 2 channel stereo
Heads	
Tape I	HD head for playback × 1
Tape II	HD head for recording & playback × 1 Erase head × 1
Motors	Electronically speed controlled DC motor × 2
Wow & Flutter	0.09% (WRMS), 0.18% (DIN)
S/N (Metal)	57dB (Measured via tape with peak recording level) Dolby NR switch ON:Improves up to 5dB at 1kHz, 10dB above 5kHz
Total harmonic distortion	Less than 0.9% (Metal)
Frequency response	
Normal	30Hz to 14,000Hz ± 3dB
CrO_2	30Hz to 15,000Hz ± 3dB
Metal	30Hz to 15,000Hz ± 3dB
Input sensitivity/ Impedance	70mV/47kohms
Output sensitivity/ Impedance	388mV/2.0kohms
Power requirements	220V, 50Hz for Europe except UK 240V, 50Hz for UK and Australia 110V/120V/220V/240V, 50Hz/60Hz convertible for other countries
Dimensions	350 (W) × 138 (H) × 349 (D) mm (13.8 × 5.4 × 13.7 inches)
Weight	4.6kg (10.1 lbs)

Standard accessories

Connection cords	RCA pin cord × 2
Operator's manual	× 1

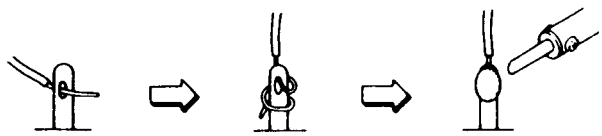
*** For improvement purposes, specifications and design are subject to change without notice.**

*** Noise reduction manufactured under license from Dolby Laboratories Licensing Corporasion. "Dolby" and the DD symbol are trade marks of Dolby Laboratories Licensing Corporation.**

★SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal-input/output connectors, etc.) and the earth ground through a resister of 1500 ohms paralleled with a 0.15 μF capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

★INFORMATION

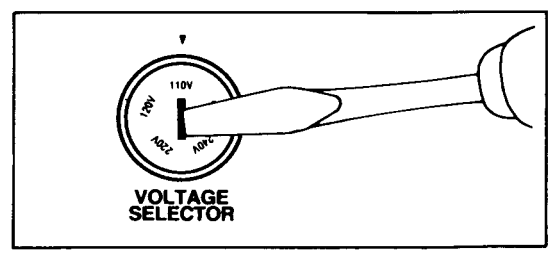
SYMBOLS FOR PRIMARY DESTINATION

Alphabet indicates the destination of the units as listed below.

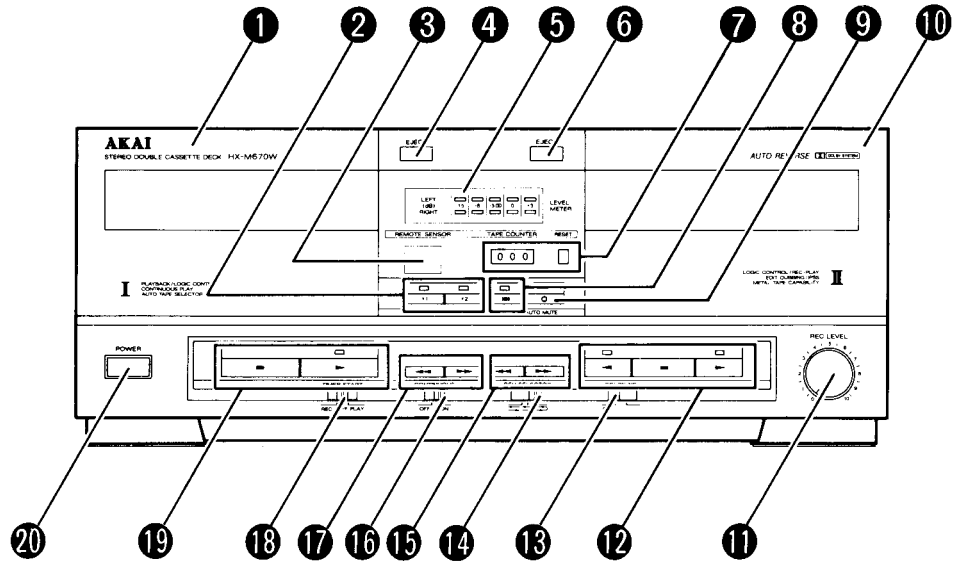
Symbols	Principal Destinations
A	USA
B	UK
C	Canada
E	Europe (except UK)
J	Japan
S	Australia
V	W. Germany only
U	Universal Area
Y*	Custom version

VOLTAGE CONVERSION (U Model only)

Before connecting the power cord. Set the VOLTAGE SELECTOR located on the rear panel with a screwdriver so that the correct voltage is indicated.



I. CONTROLS



❶ Cassette Lid and Holder for TAPE I Deck
Load a cassette tape here for playback.
Includes built-in tape sensor and auto tape selector.
The tape I deck is not equipped with automatic reverse or recording facilities.

❷ DUBBING START Buttons (×2:Double speed/ ×1:Normal speed) and Indicators
To start the normal speed or double speed tape dubbing operation. Indicators light to indicate which dubbing speed is engaged.

❸ REMOTE SENSOR Window
For reception of the remote control signal. (RC-S770 remote control unit provided with the AM-M770 or AM-M570 integrated amplifier).
Keep away from strong light and direct sunlight as this will interfere with the remote control function.

❹ EJECT Button for Tape I Deck
To open the cassette holder and eject the cassette tape.

❺ LED (Light Emitting Diode) LEVEL METER (LEFT/ RIGHT (dB))
Shows recording and playback peak signal levels.

❻ EJECT Button for Tape II Deck
To open the cassette holder and eject the cassette tape.

❼ TAPE COUNTER and RESET Button for Tape II Deck
Shows how much tape has run since the beginning of playback or recording.
RESET button resets the tape counter to "000".

❽ ⏺ REC PAUSE Button and Indicator for Tape II Deck
For recording operation with the tape II deck. Indicator lights when the tape II deck is in the recording mode.

❾ ○ AUTO MUTE Button for Tape II Deck
For mute recording operation.

❿ Cassette Lid and Holder for Tape II Deck
Load a cassette tape here for recording and playback.
Includes built-in tape sensor and auto tape selector.

⓫ REC LEVEL Control
To adjust the recording level for the Tape II deck.
Adjusts left and right channel levels at the same time.
The control will be defeated automatically during tape dubbing.

⓬ ◀ (Reverse Play), ■ (Stop) and ▶ (Forward Play) Buttons and Direction Indicators for Tape II Deck
To start or stop playback or recording.
▶ indicates the visible tape side and ◀ indicates the opposite side.
The IPSS (Instant Program Search System) is automatically engaged during the playback mode.

⓭ DOLBY NR Switch (ON/OFF)
To select the DOLBY NR system.

⓮ REV SELECTOR Switch (⇆:One way/⇨:Both way/⇨:Infinite)
To select the auto reverse mode during recording and playback on the tape II deck.
If the switch is set to the ⇨ position during recording, the deck will disregard this setting and stop after both sides have been recorded on.

⓯ Tape Winding Buttons for Tape II Deck (◀◀:Rewind/▶▶:Fast Forward)
To wind the tape in the tape II deck quickly in the direction of the arrow.

⓰ CONTINUOUS Switch (ON/OFF)
To turn the continuous system on and off.

⓱ Tape Winding Buttons for Tape I Deck (◀◀:Rewind/▶▶:Fast Forward)
To wind the tape in the tape I deck quickly in the direction of the arrow.

⓲ TIMER START Switch (REC: Record/OFF/ PLAY:Playback)
To select the timer controlled operation function when used in combination with an optional audio timer.

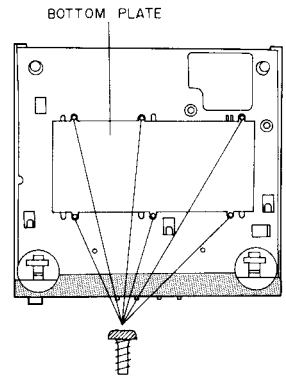
⓳ ■ (Stop) and ▶ (Forward Play) Buttons and Indicator for Tape I Deck
To start or stop playback.
The IPSS (Instant Program Search System) is automatically engaged during the playback mode.

⓴ POWER Button
To turn the power on and off.

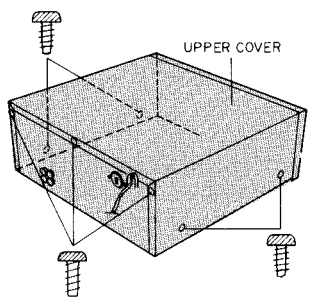
II. DISASSEMBLY

In case of trouble, etc, necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in reverse order.

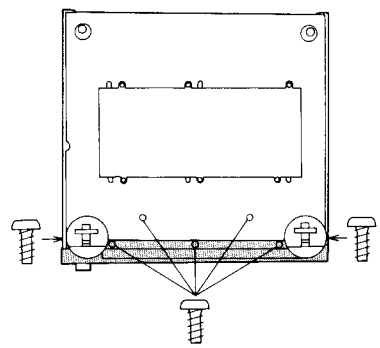
2.Removal of BOTTOM PLATE



1. Removal of UPPER COVER



3.Removal of FRONT PANEL BLOCK



III. PRINCIPAL PARTS LOCATION

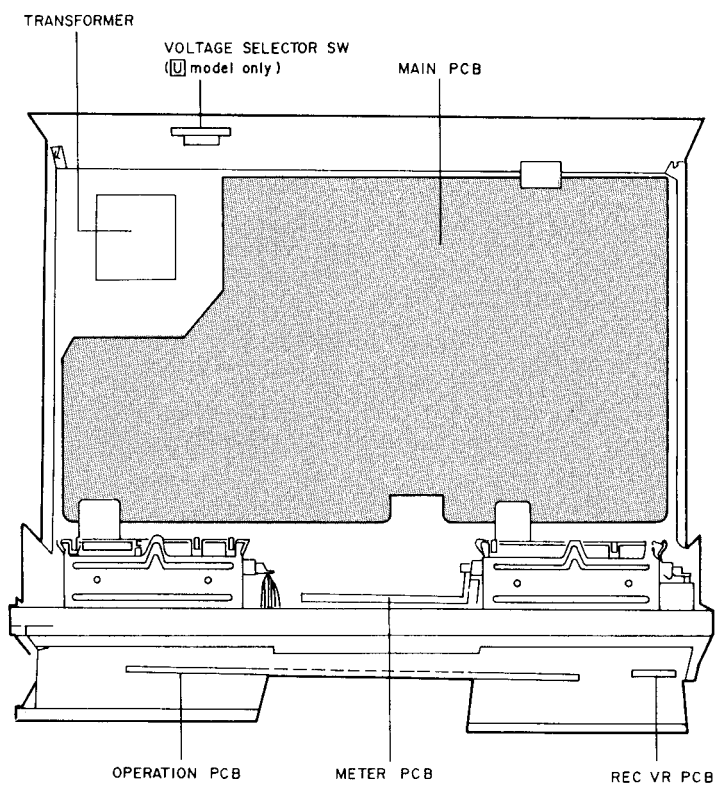


Fig. 3-1

IV. DISASSEMBLY/ASSEMBLY OF MECHA BLOCK

4-1. REMOVAL OF PINCH ROLLER BLOCK

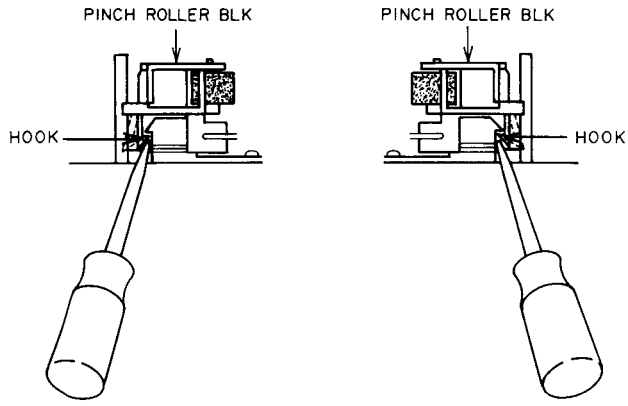


Fig. 4-1

1) Pull out the PINCH ROLLER BLK during releasing the HOOK as shown Fig. 4-1.

4-2. REMOVAL OF HEAD BLOCK

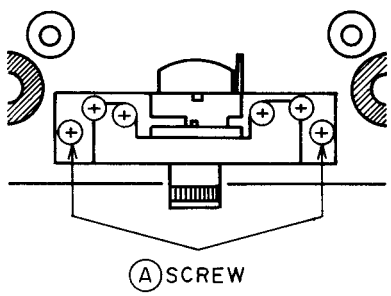


Fig. 4-2

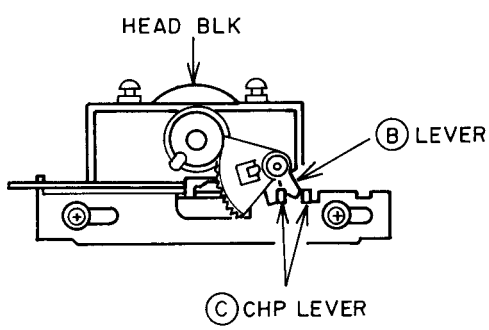


Fig. 4-3

1) Remove two Ⓐ screws, then remove HEAD BLK. When assembling the Head BLK, be sure that the Ⓑ LEVER in into the Ⓒ CHP LEVER as shown Fig 4-3 than secure two Ⓐ screws as shown Fig 4-2.

4-3. REMOVAL OF FLYWHEEL

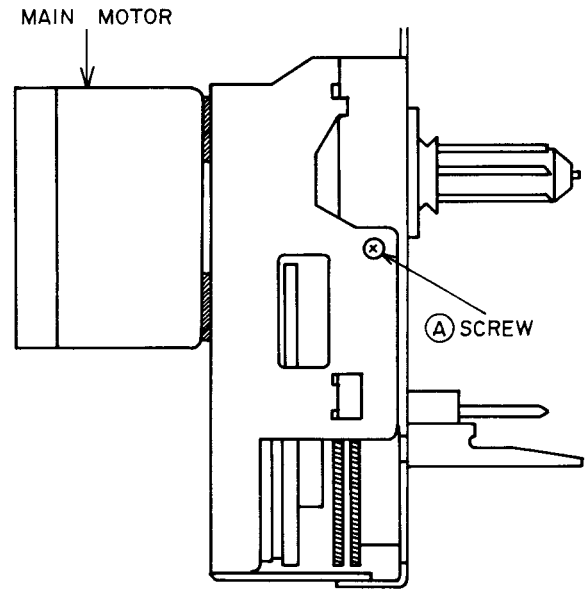


Fig. 4-4

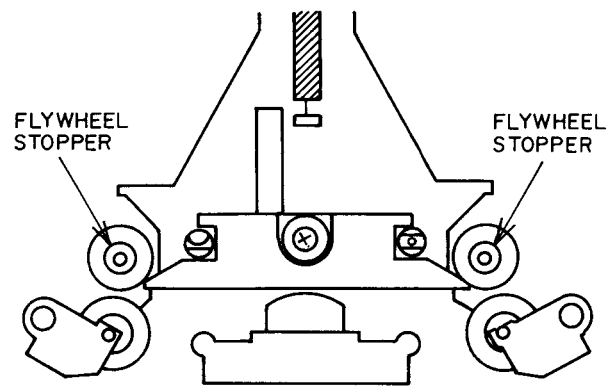


Fig. 4-5

1) Remove a Ⓐ screw and remove MAIN MOTOR BLK.
2) Remove FLYWHEEL STOPPERS.

V. MECHANICAL ADJUSTMENT

5-1. ADJUSTMENT OF HEAD AZIMUTH ALIGNMENT

NOTE: Be sure to clean the Heads befor adjustment.

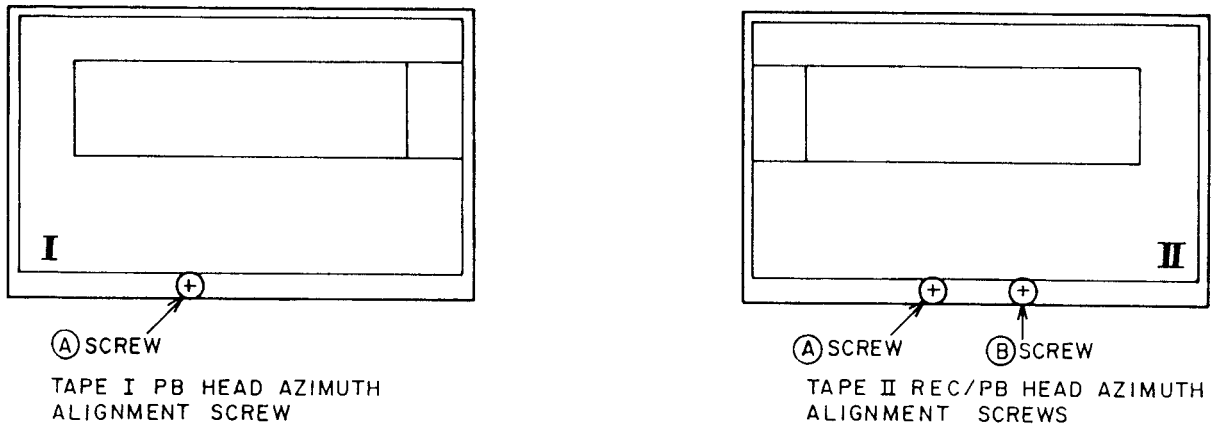


Fig. 5-1

1) Connect an AC milli-voltmeter to Lch and Rch of LINE OUT and connect an oscilloscope (DUAL TYPE) to both output of the AC milli-voltmete.

2) Playback a 10 kHz, −15VU test tape (AT-750778) and adjust Ⓐ screw (FWD PLAY) or Ⓑ screw (REV PLAY) so that the LINE OUT level of both channels are at maximum and waveforms on the oscilloscope is in the same phase.

VI. ELECTRICAL ADJUSTMENT

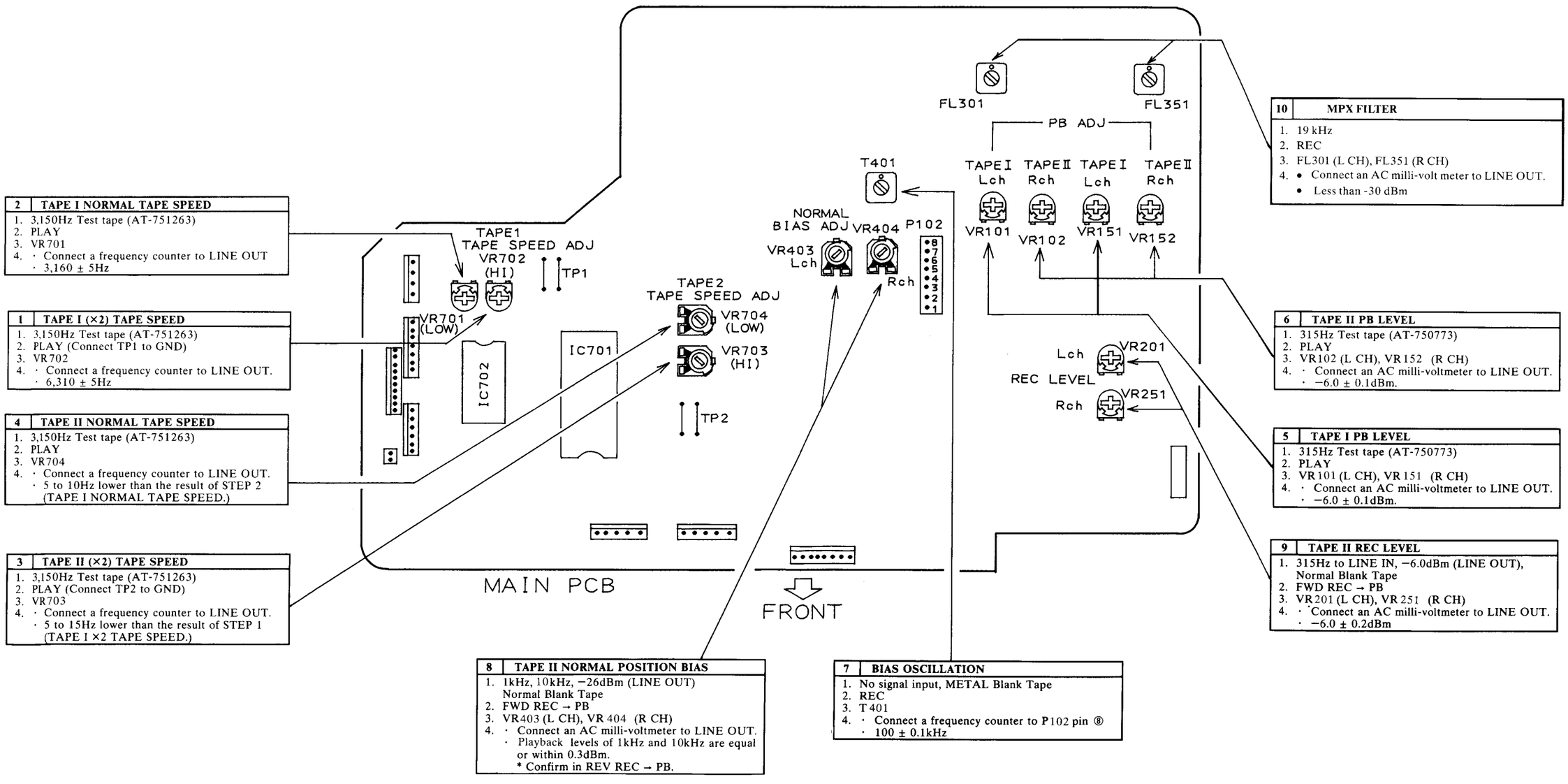
[PRECAUTIONS DURING ADJUSTMENT]

1. Be sure to clean and dimagnetize the heads before adjustment.
2. All adjustment should be performed without Dolby NR.
3. Use the following measuring tapes for recording.
   Normal position : MAXELL UDI 60
   CrO_2 position : TDK SA60
   Metal position : TDK MA60

STEP	ADJUSTMENT ITEM
1.	Test tape/input signal
2.	Mode
3.	Adjustment part
4.	Result and remarks

ADJUSTMENT PART

TEST POINT



10	MPX FILTER
1.	19 kHz
2.	REC
3.	FL301 (L CH), FL351 (R CH)
4.	• Connect an AC milli-volt meter to LINE OUT. • Less than -30 dBm

2	TAPE I NORMAL TAPE SPEED
1.	3,150Hz Test tape (AT-751263)
2.	PLAY
3.	VR701
4.	· Connect a frequency counter to LINE OUT · 3,160 ± 5Hz

1	TAPE I (×2) TAPE SPEED
1.	3,150Hz Test tape (AT-751263)
2.	PLAY (Connect TP1 to GND)
3.	VR702
4.	· Connect a frequency counter to LINE OUT. · 6,310 ± 5Hz

4	TAPE II NORMAL TAPE SPEED
1.	3,150Hz Test tape (AT-751263)
2.	PLAY
3.	VR704
4.	· Connect a frequency counter to LINE OUT. · 5 to 10Hz lower than the result of STEP 2 (TAPE I NORMAL TAPE SPEED.)

3	TAPE II (×2) TAPE SPEED
1.	3,150Hz Test tape (AT-751263)
2.	PLAY (Connect TP2 to GND)
3.	VR703
4.	· Connect a frequency counter to LINE OUT. · 5 to 15Hz lower than the result of STEP 1 (TAPE I ×2 TAPE SPEED.)

6	TAPE II PB LEVEL
1.	315Hz Test tape (AT-750773)
2.	PLAY
3.	VR102 (L CH), VR152 (R CH)
4.	· Connect an AC milli-voltmeter to LINE OUT. · −6.0 ± 0.1dBm.

5	TAPE I PB LEVEL
1.	315Hz Test tape (AT-750773)
2.	PLAY
3.	VR101 (L CH), VR151 (R CH)
4.	· Connect an AC milli-voltmeter to LINE OUT. · −6.0 ± 0.1dBm.

9	TAPE II REC LEVEL
1.	315Hz to LINE IN, −6.0dBm (LINE OUT), Normal Blank Tape
2.	FWD REC → PB
3.	VR201 (L CH), VR251 (R CH)
4.	· Connect an AC milli-voltmeter to LINE OUT. · −6.0 ± 0.2dBm

8	TAPE II NORMAL POSITION BIAS
1.	1kHz, 10kHz, −26dBm (LINE OUT) Normal Blank Tape
2.	FWD REC → PB
3.	VR403 (L CH), VR 404 (R CH)
4.	· Connect an AC milli-voltmeter to LINE OUT. · Playback levels of 1kHz and 10kHz are equal or within 0.3dBm. * Confirm in REV REC → PB.

7	BIAS OSCILLATION
1.	No signal input, METAL Blank Tape
2.	REC
3.	T401
4.	· Connect a frequency counter to P102 pin ⑧ · 100 ± 0.1kHz

VII. PARTS LIST

ATTENTION

1. **When placing an order for parts, be sure to list Part No., Model No. and the description of eachpart. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.**
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

b) PC Board

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universa
[C] : CSA (Canada) Area)
[E] : CEE (Europe) [V] : VDE (W. Germany)
[J] : JPN (Janan) [Y] : Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No.listed at right of Part No.

WARNING

⚠(*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠(*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

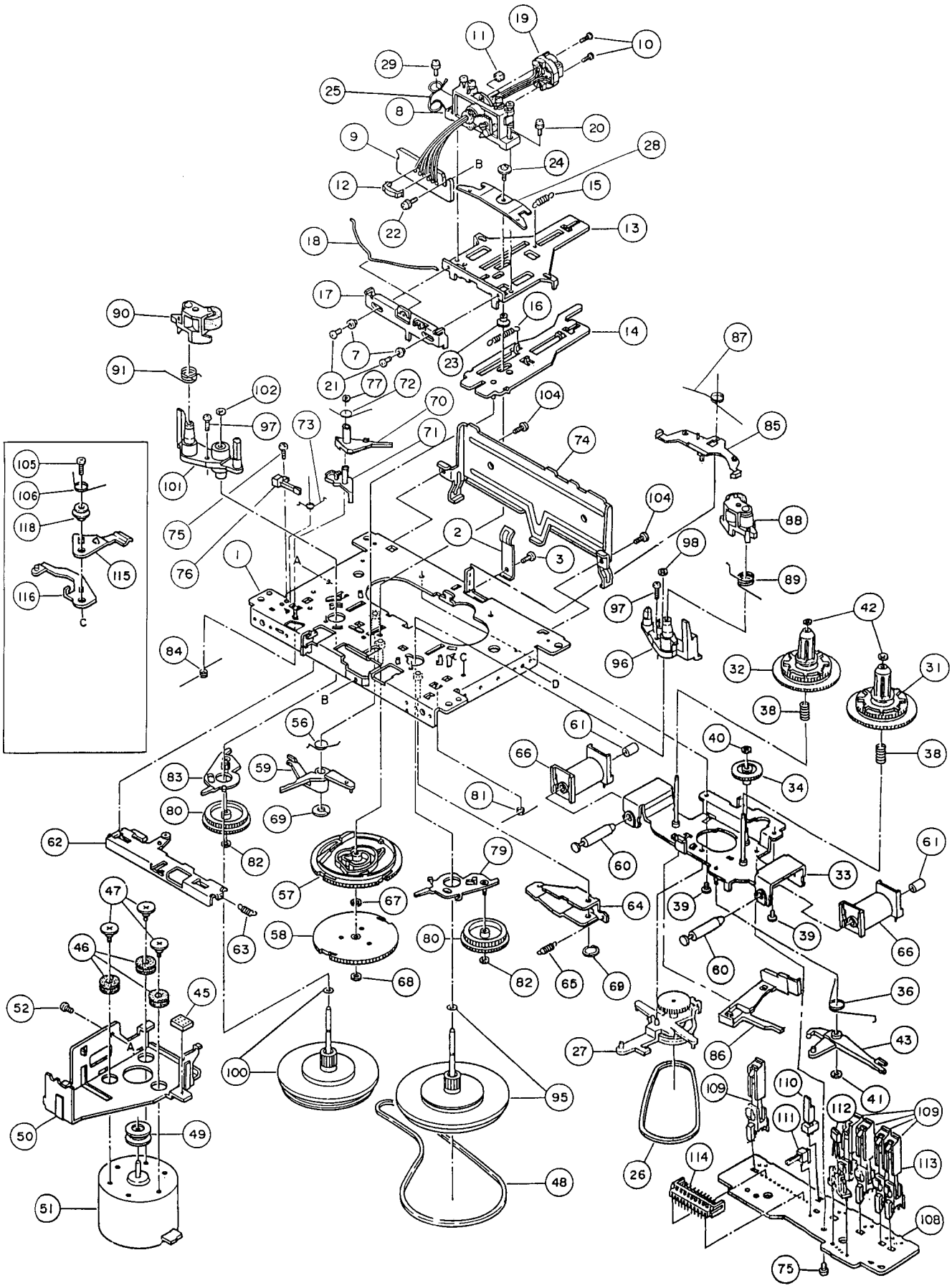
Ref. No.	Part No.	Description
1	BL-730074T	PINCH ROLLER ARM (F) ASSY
2	BL-730075T	PINCH ROLLER ARM (R) ASSY
3	BM-730062T	MOTOR SHU-2L00
4	*BT-727282T	TRANS POW HX-R435W(B,S) [B,S]
5	*BT-727283T	TRANS POW HX-R435W(E,V) [E,V]
6	*BT-727284T	TRANS POW HX-R435W(U) [U]
7	ED-729734T	D LED SE3081DT(GRN)
8	ED-729733T	D LED SE6221(GRN)
9	ED-727275T	D LED SE6401DT RED
10	ED-307572	D SILICON H 1SS131
11	*ED-570295	D SILICON 1N4003 200/1.0A
12	*ED-346567	D ZENER H HZ16-1L
13	*ED-338559	D ZENER H HZ6 B1
14	*ED-337265	D ZENER H HZ6 C2
15	*ED-346526	D ZENER H HZ6B1L
16	*ED-346545	D ZENER H HZ9C2L
17	ED-729711T	DETECTOR A1QH3111H0
18	*EF-359007	FUSE BET T 250V 1.25A
19	*EF-355385	FUSE BET T 250V 315MA
20	EI-373980	IC BA15218N
21	EI-369608	IC BA3416BL
22	EI-353289	IC IR2E27A
23	EI-730085T	IC LB9050TN
24	EI-337008	IC LC7800
25	EI-729748T	IC M50747-A27SP
26	EI-357498	IC M51143AL
27	EI-381687J	IC UPC1330HA
28	EI-368473	OSC CE CSA8.00MT
29	ES-730082T	SW LEAF MSW-1699CZ
30	ES-730081T	SW LEAF MTS-10250MVJO
31	ES-729736T	SW PUSH [REC PAUSE]
32	*ES-337902	SW PUSH SDDLD1 01-1
33	ES-729735T	SW SLIDE [TIMER]
34	ES-725456T	SW TACT [TAPE-1 STOP]
35	ET-729747T	TR DTA123JS
36	ET-373382	TR DTA143ZS
37	ET-354365	TR DTC114YS
38	ET-373392	TR DTC124XS
39	ET-354364	TR DTC143TS
40	ET-373391	TR DTC143ZS
41	ET-354414	TR DTC144ES
42	ET-356224	TR 2SA1286 G,H,J F05
43	ET-353899	TR 2SA1317 S,T,U
44	*ET-308977	TR 2SC2274K F F05
45	ET-365394	TR 2SC3242A E,F,G F05
46	ET-360137	TR 2SC3330 U,V F05
47	*ET-379239	TR 2SD1380 Q,R
48	HE-730090T	HEAD E-621ML-0201
49	HR-730054T	HEAD KC-9242CA-9730
50	HR-730091T	HEAD RP-7442BS-0951
51	MB-730060T	MAIN BELT
52	MB-730093T	MAIN BELT
53	MB-730055T	RF BELT
54	MB-730092T	RF BELT

2. CASSETTE MECHA BLOCK TN-1800-151

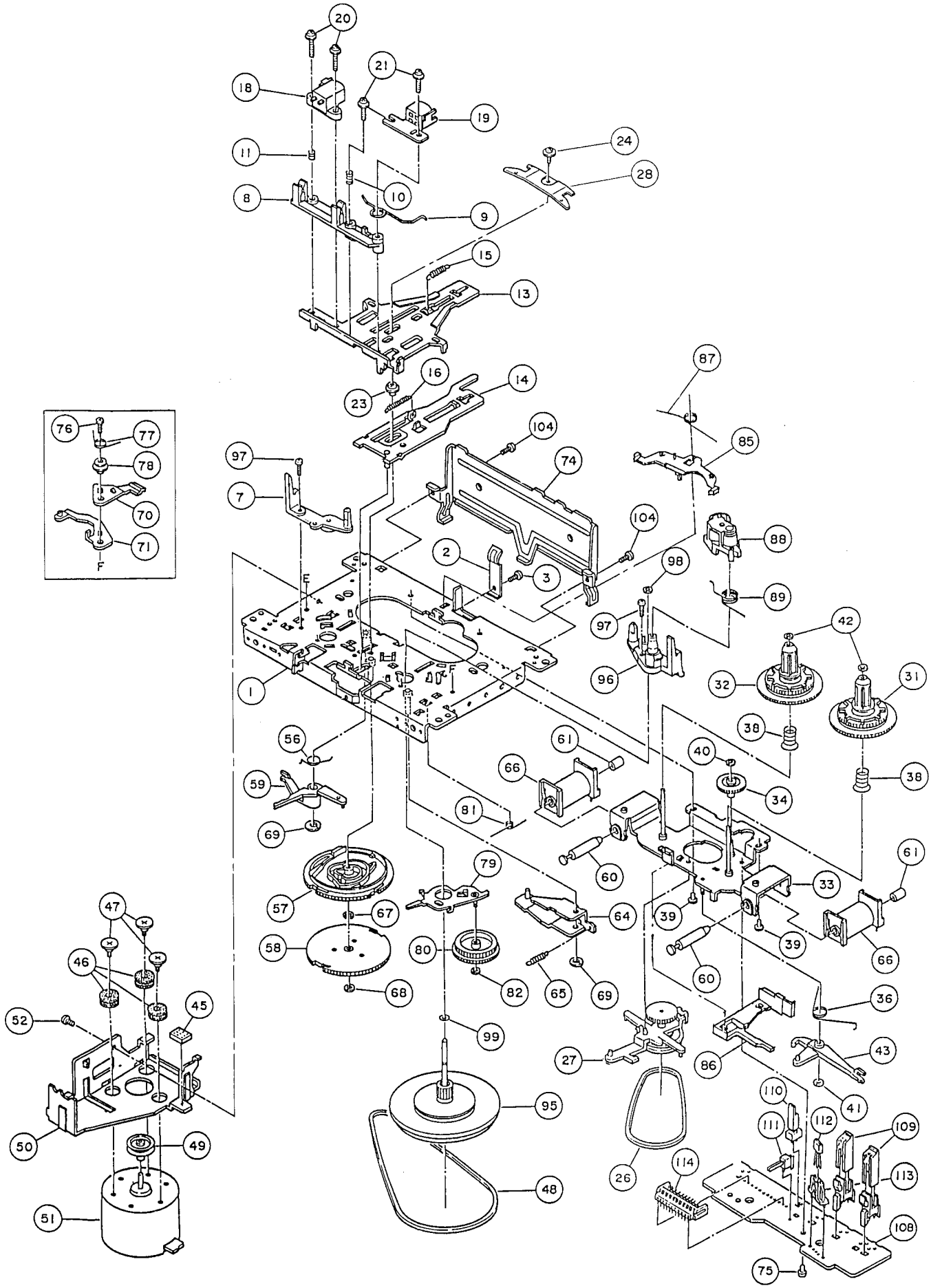
Ref. No.	Part No.	Description
2	ZG-730050T	PACK SPRING
8	HZ-730051T	HEAD BASE ASSY
17	ML-730052T	CHP LEVER
18	ZG-730053T	PINCH ROLLER SPRING
19	HR-730054T	HEAD KC-9242CA-9730
26	MB-730055T	RF BELT
27	MZ-730056T	RF CLUTCH ASSY
31	MT-730057T	T REEL ASSY(F)
32	MT-730058T	T REEL ASSY (R)
34	MZ-730059T	FF GEAR
40	ZW-720762	PW12X030X025NYL
42	ZW-730095T	HL WASHER CUT 1.4X3.2X0.5
46	MB-721962J	RUBBER MOTOR
48	MB-730060T	MAIN BELT
49	MR-730061T	MOTOR PULLEY
51	BM-730062T	MOTOR SHU-2L00
57	MZ-730063T	M GEAR
58	MZ-730064T	RF CAM GEAR
59	ML-730094T	M TRIGGER ARM
62	ML-730065T	CH SLIDE LEVER ASSY
66	EP-730066T	SOLENOID
70	ML-730067T	D LEVER
71	ML-730068T	SWITCH LEVER
76	ES-354850	SW LEAF MSW-1273NBK
77	ZW-717810	PW12X030X040PSL
79	MZ-730069T	T GEAR ARM (F) ASSY
80	MZ-730070T	T GEAR
82	ZW-720762	PW12X030X025NYL
83	MZ-730071T	T GEAR ARM (R) ASSY
85	ML-730072T	BRAKE ARM
86	ML-730073T	BRAKE LEVER
88	BL-730074T	PINCH ROLLER ARM (F) ASSY
90	BL-730075T	PINCH ROLLER ARM (R) ASSY
95	MI-730076T	FLYWHEEL (F) ASSY
96	MV-730077T	FL METAL ASSY
97	ZS-727001J	SCREW C TAPPING M2X6
98	ZW-730078T	HL WASHER CUT 1.8X4X0.5
100	MI-730079T	FLYWHEEL (R) ASSY
101	MV-730080T	FL METAL ASSY (R)
102	ZW-730084T	HL WASHER CUT 1.55X3.5X0.5
109	ES-730081T	SW LEAF MTS-10250MVJO
110	ES-730082T	SW LEAF MSW-1699CZ
111	ES-730083T	SW LEAF MSW-17940MVDO
112	EI-730085T	IC LB9050TN
200	BB-729740T	MECHA BLK TN-1800-151

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

CASSETTE MECHA BLOCK TN-1800-151



CASSETTE MECHA BLOCK TN-1800-153P



3. CASSETTE MECHA BLOCK TN-1800-153P

Ref. No.	Part No.	Description
2	ZG-730050T	PACK SPRING
7	MS-730087T	TAPE GUIDE
8	HZ-730088T	HEAD BASE
9	ZG-730089T	PINCH ROLLER SPRING
18	HE-730090T	HEAD E-621ML-0201
19	HR-730091T	HEAD RP-7442BS-0951
26	MB-730092T	RF BELT
27	MZ-730056T	RF CLUTCH ASSY
31	MT-730057T	T REEL ASSY(F)
32	MT-730058T	T REEL ASSY (R)
34	MZ-730059T	FF GEAR
40	ZW-720762	PW12X030X025NYL
42	ZW-730095T	HL WASHER CUT 1.4X3.2X0.5
46	MB-721962J	RUBBER MOTOR
48	MB-730093T	MAIN BELT
49	MR-730061T	MOTOR PULLEY
51	BM-730062T	MOTOR SHU-2L00
57	MZ-730063T	M GEAR
58	MZ-730064T	RF CAM GEAR
59	ML-730094T	M TRIGGER ARM
66	EP-730066T	SOLENOID
67	ZW-712106	RING E 200
79	MZ-730069T	T GEAR ARM (F) ASSY
80	MZ-730070T	T GEAR
82	ZW-720762	PW12X030X025NYL
85	ML-730072T	BRAKE ARM
86	ML-730073T	BRAKE LEVER
88	BL-730074T	PINCH ROLLER ARM (F) ASSY
95	MI-730076T	FLYWHEEL (F) ASSY
96	MV-730077T	FL METAL ASSY
97	ZS-727001J	SCREW C TAPPING M2X6
98	ZW-730078T	HL WASHER CUT 1.8X4X0.5
109	ES-730081T	SW LEAF MTS-10250MVJO
110	ES-730082T	SW LEAF MSW-1699CZ
111	ES-730083T	SW LEAF MSW-17940MVDO
112	EI-730085T	IC LB9050TN
200	BB-729739T	MECHA BLK TN-1800S-153P

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

4. PC BOARD BLOCK

Ref. No.	Part No.	Description
1	BA-729744T	PC PRE/SYSCON BLK HX-M670W
2	BA-729729T	PC OPERATION BLK HX-M670W
3	BD-729731T	PC METER BLK HX-M670W

5. PRE/SYSCON PC BOARD

Ref. No.	Part No.	Description
C601	*EC-369818	C CE V CS17FZ 103Z 400AC
D401	ED-307572	D SILICON H 1SS131
D601	*ED-570295	D SILICON 1N4003 200/1.0A
D602	*ED-570295	D SILICON 1N4003 200/1.0A
D603	*ED-570295	D SILICON 1N4003 200/1.0A
D604	*ED-570295	D SILICON 1N4003 200/1.0A
D605	*ED-346567	D ZENER H HZ16-1L
D651	*ED-570295	D SILICON 1N4003 200/1.0A
D652	*ED-570295	D SILICON 1N4003 200/1.0A
D653	*ED-570295	D SILICON 1N4003 200/1.0A
D654	*ED-570295	D SILICON 1N4003 200/1.0A
D655	*ED-570295	D SILICON 1N4003 200/1.0A
D656	*ED-570295	D SILICON 1N4003 200/1.0A
D657	*ED-570295	D SILICON 1N4003 200/1.0A
D658	*ED-337265	D ZENER H HZ6 C2
D659	ED-307572	D SILICON H 1SS131
D670	*ED-346526	D ZENER H HZ6B1L
D671	*ED-338559	D ZENER H HZ6 B1
D672	*ED-346545	D ZENER H HZ9C2L
D701	ED-307572	D SILICON H 1SS131
D702	ED-307572	D SILICON H 1SS131
D703	ED-307572	D SILICON H 1SS131
D704	ED-307572	D SILICON H 1SS131
D705	ED-307572	D SILICON H 1SS131
D706	ED-307572	D SILICON H 1SS131
D707	ED-307572	D SILICON H 1SS131
D708	ED-307572	D SILICON H 1SS131
D709	ED-307572	D SILICON H 1SS131
D710	ED-307572	D SILICON H 1SS131
D711	ED-307572	D SILICON H 1SS131
D712	ED-307572	D SILICON H 1SS131
F601	*EF-355385	FUSE BET T 250V 315MA
F651	*EF-359007	FUSE BET T 250V 1.25A
FL101	EO-727255T	COIL 438-100 100KHZ
FL151	EO-727255T	COIL 438-100 100KHZ
FL201	EO-727255T	COIL 438-100 100KHZ
FL251	EO-727255T	COIL 438-100 100KHZ
FL301	EH-727254T	FILTER (DOLBY)
FL351	EH-727254T	FILTER (DOLBY)
J501	EJ-720704	PIN J. 4P
IC101	EI-369608	IC BA3416BL
IC102	EI-381687J	IC UPC1330HA
IC201	EI-373980	IC BA15218N
IC301	EI-724339J	IC CXA1101
IC501	EI-357498	IC M51143AL
IC701	EI-729748T	IC M50747-A27SP
IC702	EI-337008	IC LC7800
L201	EO-347162	COIL FIX 1 TL-8 103J
L202	EO-382619J	COIL FIX 1 EL0607SKI F05 472J
L251	EO-347162	COIL FIX 1 TL-8 103J
L252	EO-382619J	COIL FIX 1 EL0607SKI F05 472J
P702	EJ-729746T	CONNECTOR 5268-02A-BLACK
R656	*ER-333064	R OMF H S20 FS 2W 820J
R657	*ER-333064	R OMF H S20 FS 2W 820J
SW601	*ES-337902	SW PUSH SDDLD1 01-1
T401	EO-727257T	COIL OSC
TR101	ET-354364	TR DTC143TS
TR102	ET-354364	TR DTC143TS
TR103	ET-354364	TR DTC143TS
TR104	ET-354364	TR DTC143TS
TR151	ET-354364	TR DTC143TS
TR152	ET-354364	TR DTC143TS
TR153	ET-354364	TR DTC143TS
TR154	ET-354364	TR DTC143TS
TR181	ET-373392	TR DTC124XS
TR182	ET-373392	TR DTC124XS
TR183	ET-373391	TR DTC143ZS
TR184	ET-360137	TR 2SC3330 U,V F05
TR201	ET-360137	TR 2SC3330 U,V F05
TR202	ET-354364	TR DTC143TS
TR203	ET-354364	TR DTC143TS
TR204	ET-354364	TR DTC143TS
TR205	ET-354364	TR DTC143TS
TR206	ET-354364	TR DTC143TS
TR251	ET-360137	TR 2SC3330 U,V F05

Ref. No.	Part No.	Description
TR252	ET-354364	TR DTC143TS
TR253	ET-354364	TR DTC143TS
TR254	ET-354364	TR DTC143TS
TR255	ET-354364	TR DTC143TS
TR256	ET-354364	TR DTC143TS
TR301	ET-729747T	TR DTA123JS
TR351	ET-729747T	TR DTA123JS
TR381	ET-729747T	TR DTA123JS
TR401	ET-729747T	TR DTA123JS
TR402	ET-729747T	TR DTA123JS
TR403	*ET-379239	TR 2SD1380 Q,R
TR404	ET-360137	TR 2SC3330 U,V F05
TR405	*ET-360137	TR 2SC3330 U,V F05
TR406	ET-354364	TR DTC143TS
TR407	ET-354364	TR DTC143TS
TR408	*ET-308977	TR 2SC2274K F F05
TR409	*ET-308977	TR 2SC2274K F F05
TR501	ET-360137	TR 2SC3330 U,V F05
TR551	ET-360137	TR 2SC3330 U,V F05
TR602	ET-365394	TR 2SC3242A E,F,G F05
TR651	ET-360137	TR 2SC3330 U,V F05
TR652	ET-353899	TR 2SA1317 S,T,U
TR653	ET-379239	TR 2SD1380 Q,R
TR654	*ET-365394	TR 2SC3242A E,F,G F05
TR701	ET-354414	TR DTC144ES
TR702	ET-354414	TR DTC144ES
TR703	ET-360137	TR 2SC3330 U,V F05
TR704	ET-354414	TR DTC144ES
TR705	ET-729747T	TR DTA123JS
TR706	ET-354365	TR DTC114YS
TR707	ET-373382	TR DTA143ZS
TR708	ET-373392	TR DTC124XS
TR709	ET-373392	TR DTC124XS
TR710	ET-369248	TR DTA114YS
TR711	ET-369248	TR DTA114YS
TR712	ET-369248	TR DTA114YS
TR713	ET-373382	TR DTA143ZS
TR714	ET-373382	TR DTA143ZS
TR715	ET-356224	TR 2SA1286 G,H,J F05
TR716	ET-356224	TR 2SA1286 G,H,J F05
TR717	ET-356224	TR 2SA1286 G,H,J F05
TR718	ET-356224	TR 2SA1286 G,H,J F05
TR719	ET-356224	TR 2SA1286 G,H,J F05
TR720	ET-360137	TR 2SC3330 U,V F05
TR721	ET-360137	TR 2SC3330 U,V F05
TR722	ET-360137	TR 2SC3330 U,V F05
TR723	ET-360137	TR 2SC3330 U,V F05
TR724	ET-360137	TR 2SC3330 U,V F05
TR725	ET-360137	TR 2SC3330 U,V F05
TR726	ET-353899	TR 2SA1317 S,T,U
TR727	ET-360137	TR 2SC3330 U,V F05
TR728	ET-353899	TR 2SA1317 S,T,U
TR729	ET-729747T	TR DTA123JS
TR731	ET-729747T	TR DTA123JS
TR732	ET-729747T	TR DTA123JS
TR734	ET-729747T	TR DTA123JS
TR735	ET-729747T	TR DTA123JS
TR736	ET-729747T	TR DTA123JS
TR737	ET-354414	TR DTC144ES
TR738	ET-354414	TR DTC144ES
VR101	EV-358829	R S-FIX H RH0615C 0.10W 223
VR102	EV-358829	R S-FIX H RH0615C 0.10W 223
VR201	EV-358829	R S-FIX H RH0615C 0.10W 223
VR151	EV-358829	R S-FIX H RH0615C 0.10W 223
VR152	EV-358829	R S-FIX H RH0615C 0.10W 223
VR251	EV-358829	R S-FIX H RH0615C 0.10W 223
VR403	EV-330531	R S-FIX H TM8KV2-1S 0.50W503
VR404	EV-330531	R S-FIX H TM8KV2-1S 0.50W503
VR701	EV-337995	R S-FIX H RVF8P01 0.10W 103
VR702	EV-337992	R S-FIX H RVF8P01 0.10W 502
VR703	EV-337995	R S-FIX H RVF8P01 0.10W 103
VR704	EV-337992	R S-FIX H RVF8P01 0.10W 502
X701	EI-368473	OSC CE CSA8.00MT

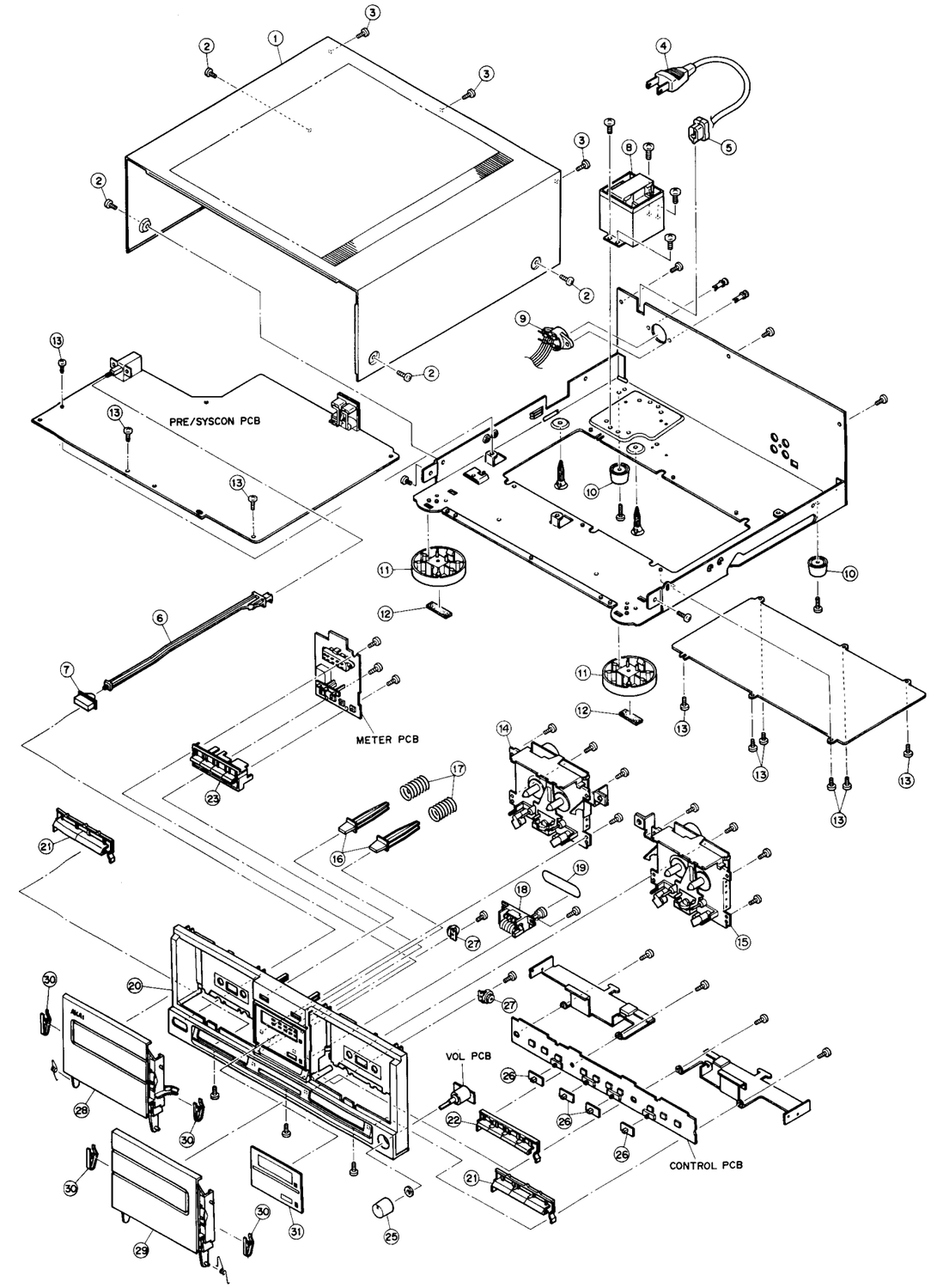
6. METER PC BOARD

Ref. No.	Part No.	Description
D201	ED-307572	D SILICON H 1SS131
D202	ED-307572	D SILICON H 1SS131
D211	ED-727274T	D LED SE6421DT GREEN
D212	ED-727274T	D LED SE6421DT GREEN
D213	ED-727274T	D LED SE6421DT GREEN
D214	ED-727275T	D LED SE6401DT RED
D215	ED-727275T	D LED SE6401DT RED
D216	ED-727274T	D LED SE6421DT GREEN
D217	ED-727274T	D LED SE6421DT GREEN
D218	ED-727274T	D LED SE6421DT GREEN
D219	ED-727275T	D LED SE6401DT RED
D220	ED-727275T	D LED SE6401DT RED
D221	ED-729733T	D LED SE6221(GRN)
D222	ED-729733T	D LED SE6221(GRN)
D223	ED-729733T	D LED SE6221(GRN)
D224	ED-729734T	D LED SE3081DT(GRN)
IC201	EI-353289	IC IR2E27A
R201	ER-321192	R OMF H S20 FS 2W 101J
R202	ER-321192	R OMF H S20 FS 2W 101J
RM201	ED-729711T	DETECTOR A1QH3111H0
TS201	ES-729736T	SW PUSH [REC PAUSE]
TS202	ES-729736T	SW PUSH [AUTO MUTE]
TS203	ES-729736T	SW PUSH [X1]
TS204	ES-729736T	SW PUSH [X2]

7. OPERATION PC BOARD

Ref. No.	Part No.	Description
D101	ED-624903	D SILICON H 1S2473
D102	ED-624903	D SILICON H 1S2473
D113	ED-729733T	D LED SE6221(GRN)
D114	ED-729733T	D LED SE6221(GRN)
D115	ED-729733T	D LED SE6221(GRN)
TS101	ES-725456T	SW TACT [TAPE-1 STOP]
TS103	ES-725456T	SW TACT [TAPE-1 FWD]
TS104	ES-725456T	SW TACT [TAPE-1 RWD]
TS105	ES-725456T	SW TACT [TAPE-1 FF]
TS106	ES-725456T	SW TACT [TAPE-2 RWD]
TS107	ES-725456T	SW TACT [TAPE-2 FF]
TS108	ES-725456T	SW TACT [TAPE-2 REV]
TS109	ES-725456T	SW TACT [TAPE-2 STOP]
TS110	ES-725456T	SW TACT [TAPE-2 FWD]
SW101	ES-729735T	SW SLIDE [TIMER]
SW102	ES-729735T	SW SLIDE [CONTINOUS]
SW103	ES-729735T	SW SLIDE [REV. SELECTOR]
SW104	ES-729735T	SW SLIDE [DOLBY]

FINAL ASSEMBLY BLOCK



8. REC VR PC BOARD

Ref. No.	Part No.	Description
VR501	EV-729737T	VR ROTARY 50KAX2

9. FINAL ASSEMBLY

Ref. No.	Part No.	Description
1	SP-390650J	CASE TOP HX-M770W
2	ZS-322580	ST BID40X08STL BNI
3	ZS-305827	ST BID30X06STL BNI
4-A	*EW-346249	AC CORD 2 CORES LCFL2X0.75 B [B]
4-B	*EW-347897	AC CORD 2 CORES VM0364,LCFL EV [E,V]
4-C	*EW-347898	AC CORD 2 CORES VM-0436,LCFL S [S]
4-D	*EW-374894	AC CORD 2C VM-0129A,VFF U/T [U]
5	*EZ-371605	BUSH CORD 2271
6	MZ-729712T	JOINT POWER
7	SK-725482T	KNOB POWER-B
8-A	*BT-727282T	TRANS POW HX-R435W(B,S) [B,S]
8-B	*BT-727283T	TRANS POW HX-R435W(E,V) [E,V]
8-C	*BT-727284T	TRANS POW HX-R435W(U) [U]
9	*ES-359606	SW SELECTOR JUH1420-0201 01-4 [U]
10	SA-729691T	FOOT
11	SA-729693T	FOOT
12	SA-729692T	CUSHION FOOT
13	ZS-609197	T2PAN30X06STL BNI
14	BB-729739T	MECHA BLK TN-1800S-153P
15	BB-729740T	MECHA BLK TN-1800-151
16	SK-729713T	KNOB EJECT
17	ZG-729718T	SP EJECT
18	MC-729728T	COUNTER T3SG100-160B1-789
19	MB-729719T	BELT COUNTER
20	BD-729720T	PANEL FRONT BLK HX-M670W
21-A	SK-729726T	KNOB OPERATION [TAPE 2]
21-B	SK-729725T	KNOB OPERATION [TAPE-1]
22	SK-729723T	KNOB FF
23	SK-729722T	KNOB DUBBING
24	SK-729724T	KNOB BSPS
25	SK-725598T	KNOB TONE-B
26	SK-729727T	KNOB SLIDE SW
27	MZ-391605J	DAMPER 3F96-E
28	BD-729714T	LID PANEL(L) HX-M670W
29	BD-729716T	LID PANEL(R) HX-M670W
30	ZG-336615	SP PLATE CASSETTE HOLDER (B)
31	SE-729788T	ORNAMENT(LEVEL METER) HX-M670W

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

INDEX

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
BA-729729T	4-2	ED-729733T	6-D221	ES-730082T	3-110	ET-379239	5-TR403
BA-729744T	4-1	ED-729733T	6-D222	ES-730083T	2-111	ET-379239	5-TR653
BB-729739T	3-200	ED-729733T	6-D223	ES-730083T	3-111	ET-729747T	1-35
BB-729739T	9-14	ED-729733T	7-D113	ET-308977	1-44	ET-729747T	5-TR301
BB-729740T	2-200	ED-729733T	7-D114	ET-308977	5-TR408	ET-729747T	5-TR351
BB-729740T	9-15	ED-729733T	7-D115	ET-308977	5-TR409	ET-729747T	5-TR381
BD-729714T	9-28	ED-729734T	1-7	ET-353899	1-43	ET-729747T	5-TR401
BD-729716T	9-29	ED-729734T	6-D224	ET-353899	5-TR652	ET-729747T	5-TR402
BD-729720T	9-20	EF-355385	1-19	ET-353899	5-TR726	ET-729747T	5-TR705
BD-729731T	4-3	EF-355385	5-F601	ET-353899	5-TR728	ET-729747T	5-TR729
BL-730074T	1-1	EF-359007	1-18	ET-354364	1-39	ET-729747T	5-TR731
BL-730074T	2-88	EF-359007	5-F651	ET-354364	5-TR101	ET-729747T	5-TR732
BL-730074T	3-88	EH-727254T	5-FL301	ET-354364	5-TR102	ET-729747T	5-TR734
BL-730075T	1-2	EH-727254T	5-FL351	ET-354364	5-TR103	ET-729747T	5-TR735
BL-730075T	2-90	EI-337008	1-24	ET-354364	5-TR104	ET-729747T	5-TR736
BM-730062T	1-3	EI-337008	5-IC702	ET-354364	5-TR151	EV-330531	5-VR403
BM-730062T	2-51	EI-353289	1-22	ET-354364	5-TR152	EV-330531	5-VR404
BM-730062T	3-51	EI-353289	6-IC201	ET-354364	5-TR153	EV-337992	5-VR702
BT-727282T	1-4	EI-357498	1-26	ET-354364	5-TR154	EV-337992	5-VR704
BT-727282T	9-8-A	EI-357498	5-IC501	ET-354364	5-TR202	EV-337995	5-VR701
BT-727283T	1-5	EI-368473	1-28	ET-354364	5-TR203	EV-337995	5-VR703
BT-727283T	9-8-B	EI-368473	5-X701	ET-354364	5-TR204	EV-358829	5-VR101
BT-727284T	1-6	EI-369608	1-21	ET-354364	5-TR205	EV-358829	5-VR102
BT-727284T	9-8-C	EI-369608	5-IC101	ET-354364	5-TR206	EV-358829	5-VR201
EC-369818	5-C601	EI-373980	1-20	ET-354364	5-TR252	EV-358829	5-VR151
ED-307572	1-10	EI-373980	5-IC201	ET-354364	5-TR253	EV-358829	5-VR152
ED-307572	5-D401	EI-381687J	1-27	ET-354364	5-TR254	EV-358829	5-VR251
ED-307572	5-D659	EI-381687J	5-IC102	ET-354364	5-TR255	EV-729737T	8-VR501
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ED-307572	5-D711	EO-382619J	5-L202	ET-354414	5-TR738	HR-730091T	3-19
ED-307572	5-D712	EO-382619J	5-L252	ET-356224	1-42	HZ-730051T	2-8
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Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
MZ-730059T	2-34						
MZ-730059T	3-34						
MZ-730063T	2-57						
MZ-730063T	3-57						
MZ-730064T	2-58						
MZ-730064T	3-58						
MZ-730069T	2-79						
MZ-730069T	3-79						
MZ-730070T	2-80						
MZ-730070T	3-80						
MZ-730071T	2-83						
SA-729691T	9-10						
SA-729692T	9-12						
SA-729693T	9-11						
SE-729788T	9-31						
SK-725482T	9-7						
SK-725598T	9-25						
SK-729713T	9-16						
SK-729722T	9-23						
SK-729723T	9-22						
SK-729724T	9-24						
SK-729725T	9-21-B						
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SK-729727T	9-26						
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ZS-609197	9-13						
ZS-727001J	2-97						
ZS-727001J	3-97						
ZW-712106	3-67						
ZW-717810	2-77						
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ZW-730078T	2-98						
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ZW-730095T	2-42						
ZW-730095T	3-42						

ABBREVIATIONS FOR SERVICE MANUAL (CASSETTE)

Abbreviation	Explanation	Abbreviation	Explanation
AC	Alternating Current	MIN	MINute
A/D	Analog/Digital	MML	Maximum Modulation Level
AF	Auto Fader	MOL	Maximum Output Level
AMP	AMPlifier	MPX	Multi PleX
AR	Anti Recording	NC	Not Connected (No Connection)
AT BIAS	Auto Turning BIAS	NFB	Negative Feed Back
ATT	ATTenuator	NORM	NORMal
BAL	BALance	NR	Noise Reduction
BEF	Band Elimination Filter	OSC	OSCillator (OSCillation)
BSS	Blank Search System	P	Pulse
CAP M	CAPstan Motor	PB	Play Back
CH	CHannel	QMSS	Quick Memory Search System
COMP	COMParator	QR	Quick Reverse
CONT	CONTinuance	R CH	Right CHannel
CRLP	Computer Recording Level Processing	REC	RECord (RECording)
CS	Chip Select	REV	REVerse
D/A	Digital/Analog	ROT	ROTation
DC	Direct current	REW	REWind
DET	DETector	SEC	SECond
DISCRI	DISCRIminator	SELE	SELEctor
DUB	DUBbing	SENS	SENSitivity
EQ	EQualizer	SEPP	Single Ended Push Pull
FF (or F.FWD)	Fast Foward	SIG	SIGnal
FLD	FLuoresent Display	SPECT	SPECTrum
FREQ	FREQuency	STD	STanDard
FWD	ForWarD	SW	SWitch
GND	GrouND	SYSCON	SYStem CONtrol
H	High	TP	Test Point
HPF	High Pass Filter	TRIG	TRIGa
IND	INDicator	VCA	Voltage Control Attenuator
IPLS	Instant Program Location System	VOL	VOLume
L	Low	VOLT	VOLtage
L CH	Left CHannel	VR	Variable Resistor
LED	Light Emitining Diode	X'TAL	cysTAL
MEMO	MEMOry	X1	Normal speed
MICOM	MIcroCOMputer	X2	Dubble speed

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MODEL HX-M670W

SCHEMATIC DIAGRAMS AND PC BOARDS

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4. PRE & SYSCON SCHEMATIC DIAGRAM 6
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LINE IN (L)

REC LEVEL VR501

TR301

FL301 FILTER

TAPE I PB HEAD Lch Rch

PEAK TR101

IC101 BA3416BL

LOGIC

FL101 FILTER

C106 R107 R109

X2 PB 70μS EQ TR102

VR102 TAPE I PB LEVEL VR101 TAPE I PB LEVEL

TR104 TR103

TR183

IC301 CXA1101P

ATT1 SC DET ATT2 ATT3

TR501 PB MUTE;H

TR705 TR706

PB MUTE

X2 PB PEAK

TAPE I REC/PB HEAD Lch

IC102 μPC 1330HA

TR181 TR182

X2 PB 70μS

X1 PB 70μS

PB I/I

TR184

I REC/PB

TAPE I REC LEVEL VR201

IC201 BA15218N

FL201 BIAS TRUP

TAPE I REC AMP

TR201

TR707 TR708

REC MUTE

REC MUTE;H

PEAK PEAK EQ EQ

TR206 TR205 TR203 TR202

TR714

TR713

TR710 TR712 TR204 TR711

X2 REC PEAK

I REC PEAK

X1 REC PEAK

I REC METAL

I REC CrO2

NORMAL BIAS VR403

T401 TR408, TR409

OSC

TR403, TR404 OSC POWER SUPPLY VOLTAGE CONTROL +B

BIAS ADJ

VR402 METAL VR401 CrO2

TR407 TR406 TR405 TR401 TR402

TR729 TR731 TR732 TR734 TR735 TR736

T901

D601~D604

TR602 REG +23V +15V

TR651, TR652 POWER OFF DET +5.5V

D651~D654

D657 TR653 REG +5V

TR654 REG +8.5V

D656 +13V

D655 +13V

IN3 IN4

SW101 REC↔OFF↔PB TIMER START

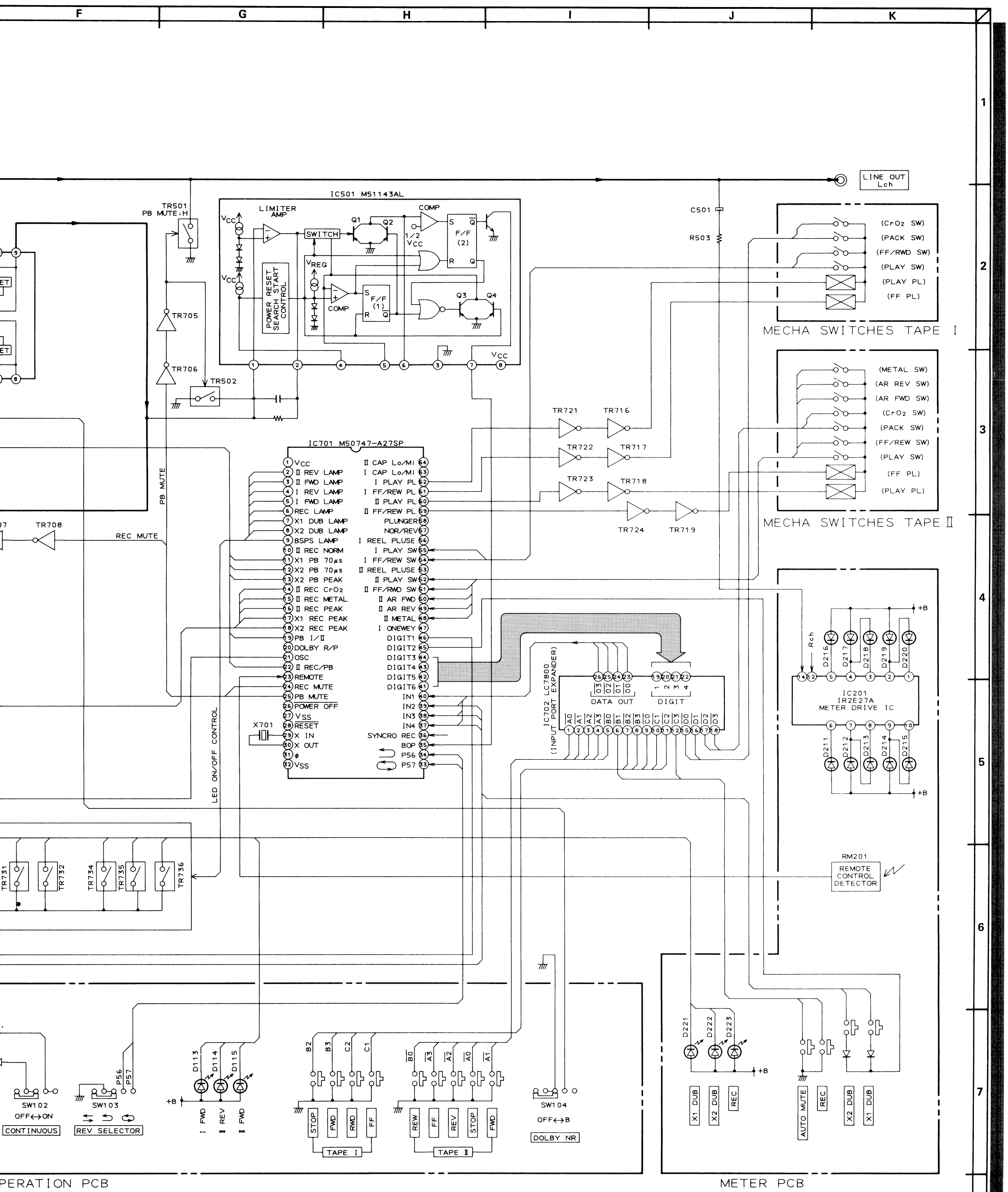
SW102 OFF↔ON CONTINUOUS

SW103 REV SELECTOR

P56 P57

+B

OPERATION PCB



OPERATION PCB

METER PCB

HX-M670W
BLOCK DIAGRAM
NO. TB01651M

METAL SW
AR REV SW
AR FWD SW
CrO2 SW
PACK SW
FF/REW SW
PLAY SW
FF PL
PLAY PL
REEL PLUSE
GND
+9.0V
J707
J706
J501
LINE IN
LINE OUT
SYNCRO REC
Lch
Rch
GND
P702
TAPE I
PB HEAD
P101
TAPE II
REC/PB HEAD
P102
E
FE
REC LEVEL
J502
VR501 50kA
P501
REC OUT Rch
REC OUT Lch
REC IN Rch
REC IN Lch
REC VR PCB
L241A089H01-C
PRE&SYSCON PCB L241A089H01-A
+9V
X1 DUB LAMP
X2 DUB LAMP
REC LAMP
J704
X2 DUB
X1 DUB
REC
AUTO MUTE
DIGIT 2
J705
REMOTE
+5V
+13V
+8V
J503
J702
I STOP
I FWD
I FF
I REW
CONT OFF
W201
W202
W203
W101
TS202
TS201
TS204
TS203
D202 1SS131
D201 1SS131
D222
D221
D223
X1 DUB.L
X2 DUB.L
REC.L
AUTO MUTE
REC
X2 DUB
X1 DUB
D221~223
SE-6221-2H
TS201~204
SKHHAP
R201
2W
100
RM201 A1QH3111HO
D211~213
D216~218
SE-6421DT
D214, 215
D219, 220
SE-6401DT
F202 1W 100
D216
D217
D218
D219
D220
D211
D212
D213
D214
D215
IC201 IR2E27A
C201
C202
C203
10/16
TS102
TS103
TS104
TS105
PB
METER PCB L241A089H01-B
OPERATION PCB

WARNING: ⚠ AND ▒▒ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▒▒, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

L241A089H01-A

SYNCRO REC

P702 (2 GND, 1 SYNCRO REC)

P703
- PL 1
- PH 2
- +13V 3
- GND 4

TAPE I CAPSTAN MOTOR

P704
- PL 1
- PH 2
- +13V 3
- GND 4

TAPE II CAPSTAN MOTOR

P701
- IN 1 2
- DIGIT 1 1

DIRECTION SW

⚠ B S AC240V 50Hz

⚠ U AC110~240V 50/60Hz

⚠ E V AC220V 50Hz

POWER

SW601 SDDLD 1047U-CL

C601 103P/400AC

U T901 ⚠ L350Y181H01
- 240V BLU
- 220V WHT
- 120V YLW
- 110V BRN
- 0V RED

SELECTOR SW

⚠ B S 240V BLU
⚠ E V 220V WHT
0V RED

E V T901 L350Y179H01
B S T901 L350Y179H11

J702 (9 I STOP, 8 I FWD, 7 I FF, 6 I REV, 5 GND, 4 CONT OFF, 3 CONT ON, 2 TIMER PB, 1 TIMER REC)

J703 (4 I FWD LAMP, 3 +9V, 2 II REV LAMP, 1 II FWD LAMP)

J705 (7 I STOP, 6 II STOP, 5 II FWD, 4 II REV, 3 II FF, 2 II REV, 1 II REW)

J701 / J302 (1 GND, 2 DOLBY ON/OFF, 3 NC)

W101 W102 W104 W103

D113 D114, 115 SE-6221

D101 1S2473 D102 1S2473

TS102 TS103 TS104 TS105 TS106 TS107 TS108 TS109 TS110

SW101 L431Y037H01 SW102 L431Y037H01 SW103 L431Y037H01 SW104 L431Y037H01

I STOP | I FWD | I REW | I FF | PB OFF REC | OFF ON | TIMER | CONT | I FWD.L | II REV.L | II FWD.L | REV SELECT | II REW | II FF | II REV | II STOP | II RWD | OFF B | DOLBY

D220

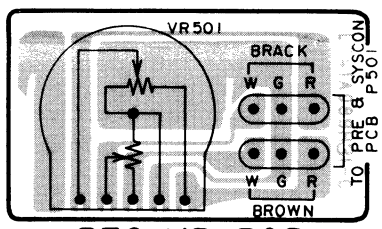
C203 10/16

B (POWER SUPPLY) LINE
REC SIGNAL LINE

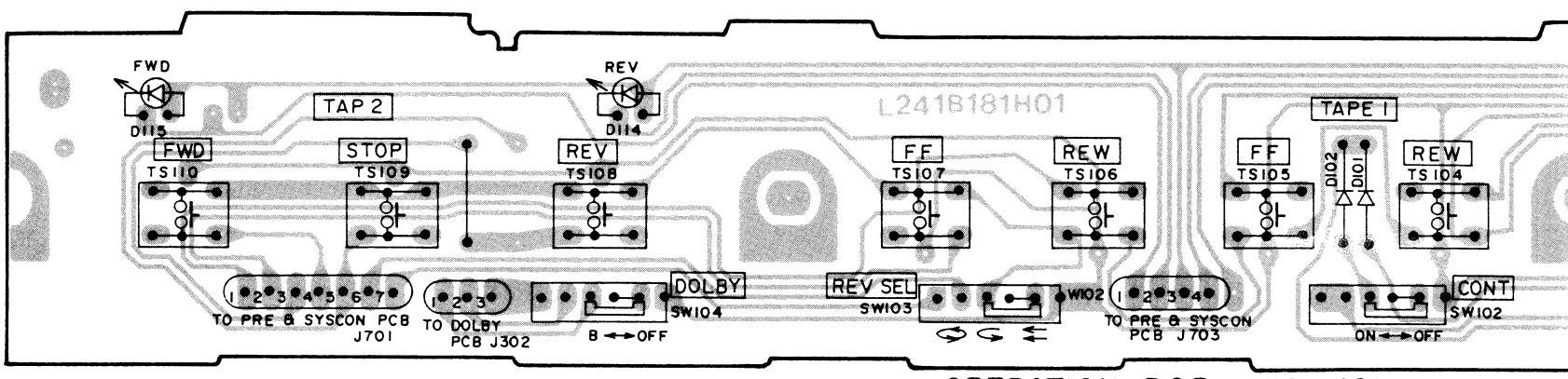
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)

OPERATION PCB L241B181H01

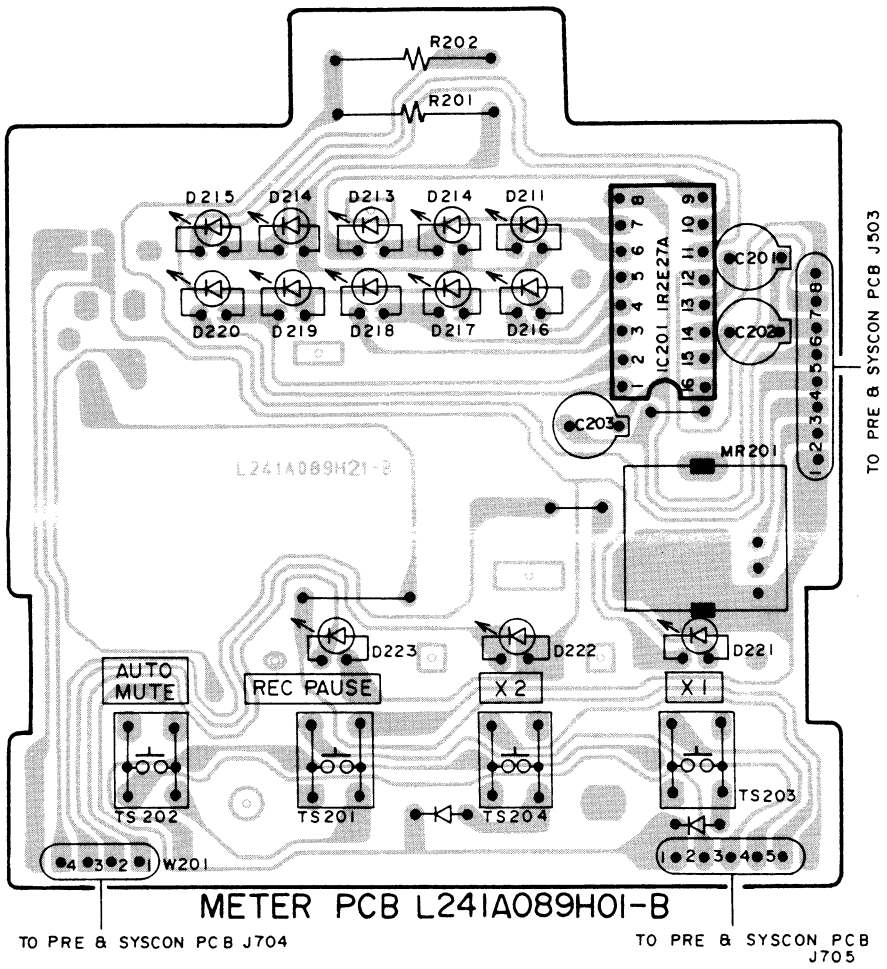
HX-M670W
CONNECTION DIAGRAM
NO.2-1 TB01601M



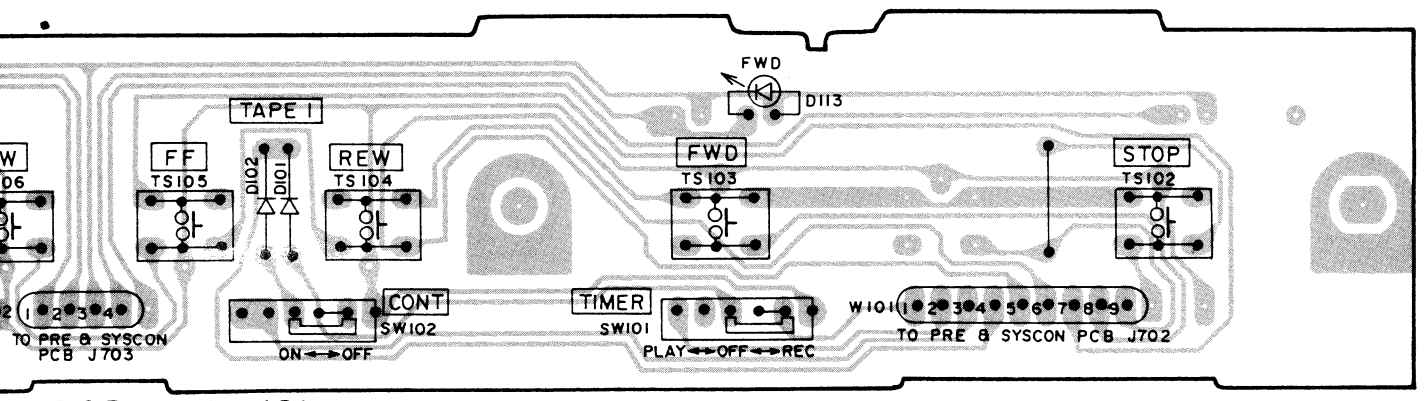
REC VR PCB



OPERATION PCB L241B181H01



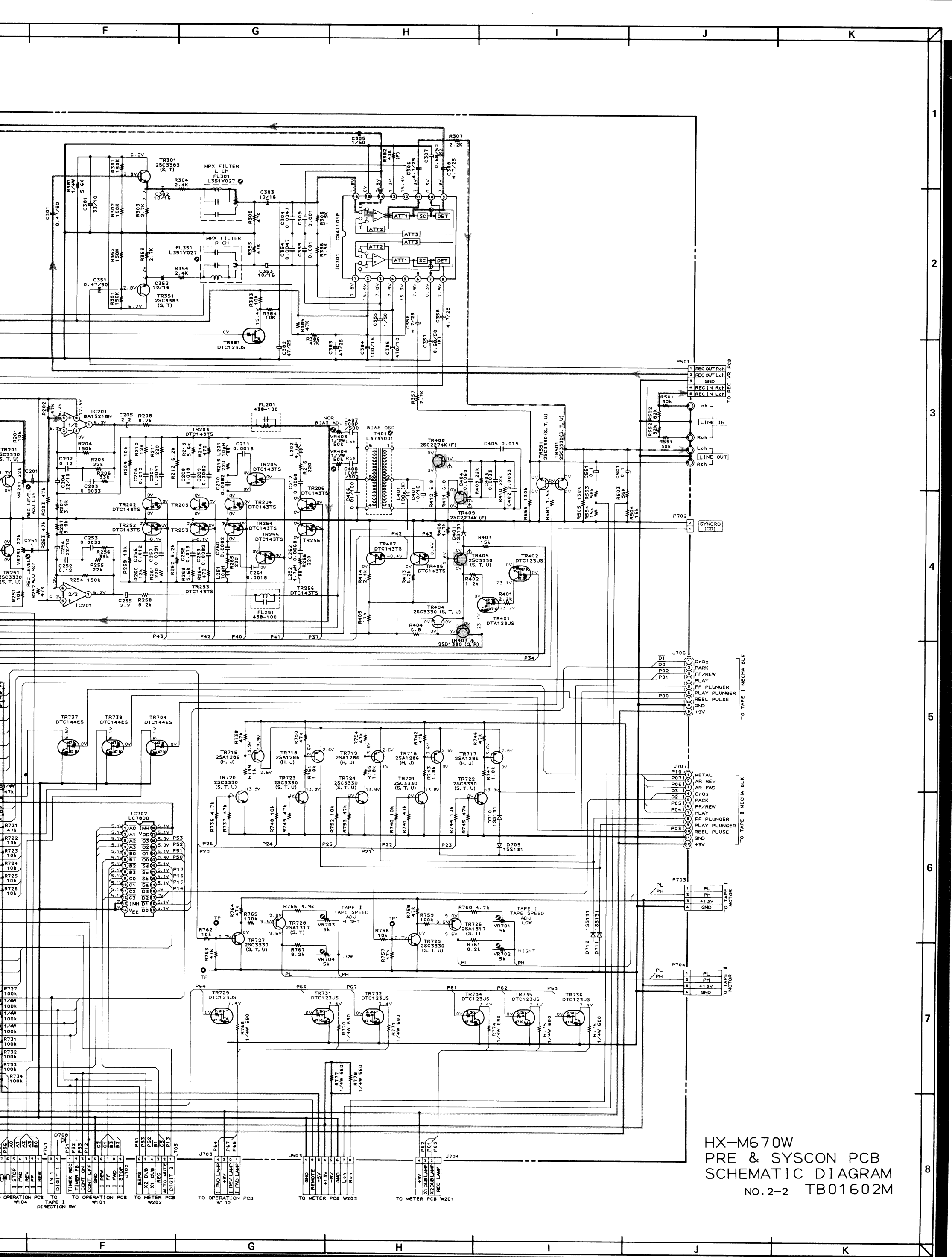
METER PCB L241A089H01-B



ON PCB L241B181H01

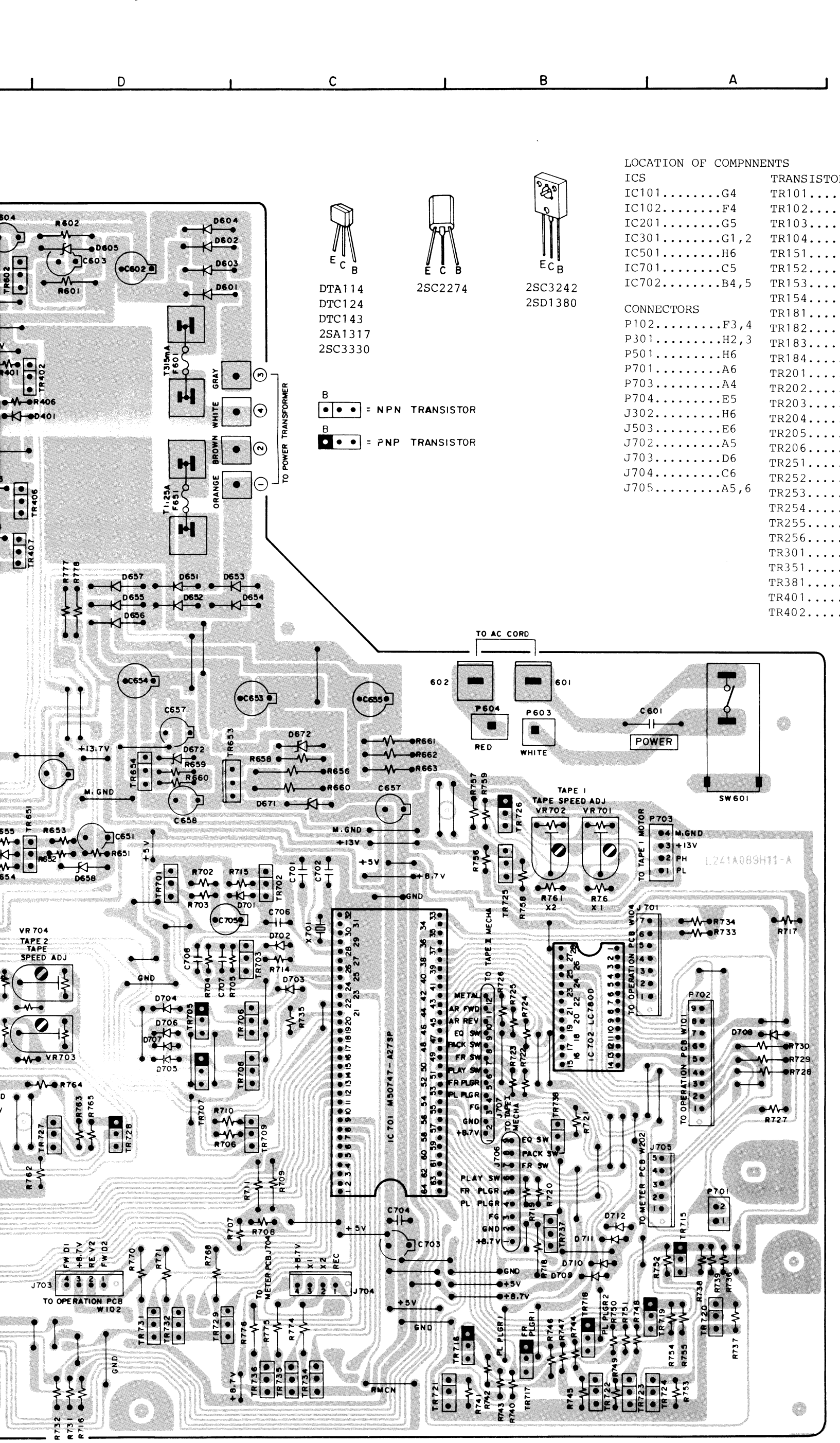
WARNING: ⚠ AND [redacted] INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET [redacted], ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT



HX-M670W
PRE & SYSCON PCB
SCHEMATIC DIAGRAM
NO.2-2 TB01602M

PRE 8 SYSCON PCB L241A089H11-A



LOCATION OF COMPNNENTS

ICS

IC101.....G4
IC102.....F4
IC201.....G5
IC301.....G1,2
IC501.....H6
IC701.....C5
IC702.....B4,5

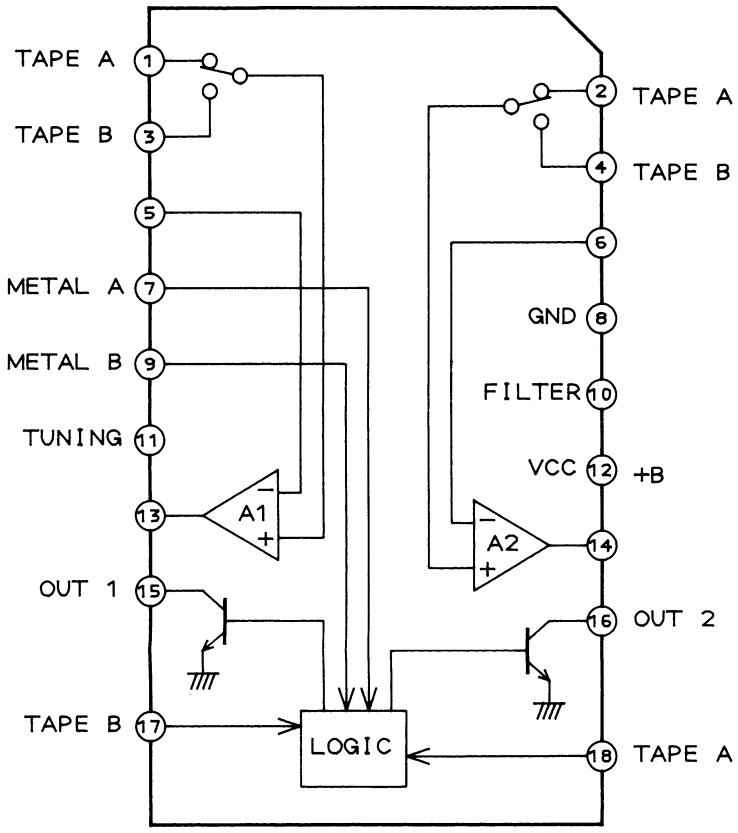
CONNECTORS

P102.....F3,4
P301.....H2,3
P501.....H6
P701.....A6
P703.....A4
P704.....E5
J302.....H6
J503.....E6
J702.....A5
J703.....D6
J704.....C6
J705.....A5,6

TRANSISTORS

TR101.....H4
TR102.....G4
TR103.....G3
TR104.....G3
TR151.....H4
TR152.....G4
TR153.....G3
TR154.....H3
TR181.....F4
TR182.....F4
TR183.....G3
TR184.....F4
TR201.....H5
TR202.....G6
TR203.....G6
TR204.....F6
TR205.....F6
TR206.....F6
TR251.....H5
TR252.....G6
TR253.....G6
TR254.....F6
TR255.....F6
TR256.....F6
TR301.....G2
TR351.....H2
TR381.....G2
TR401.....E1
TR402.....E1
TR403.....E1
TR404.....E2
TR405.....E2
TR406.....E2
TR407.....E2
TR408.....F2
TR409.....F2
TR501.....F1
TR551.....F1
TR602.....E1
TR651.....D4
TR652.....E4
TR654.....D3
TR701.....D4
TR702.....C4
TR703.....C4
TR704.....F1
TR705.....D5
TR706.....C5
TR707.....D5
TR708.....C5
TR709.....C5
TR710.....F5
TR711.....F5
TR712.....F5
TR713.....F5
TR714.....F5
TR715.....A6
TR716.....B6
TR717.....B6
TR718.....B6
TR719.....A6
TR720.....A6
TR721.....B6
TR722.....B6
TR723.....A6
TR724.....A6
TR725.....B4
TR724.....A6
TR725.....B4
TR726.....B4
TR727.....D5
TR728.....D5
TR729.....C6
TR731.....D6
TR732.....D6
TR734.....C6
TR735.....C6
TR737.....B6
TR738.....B5

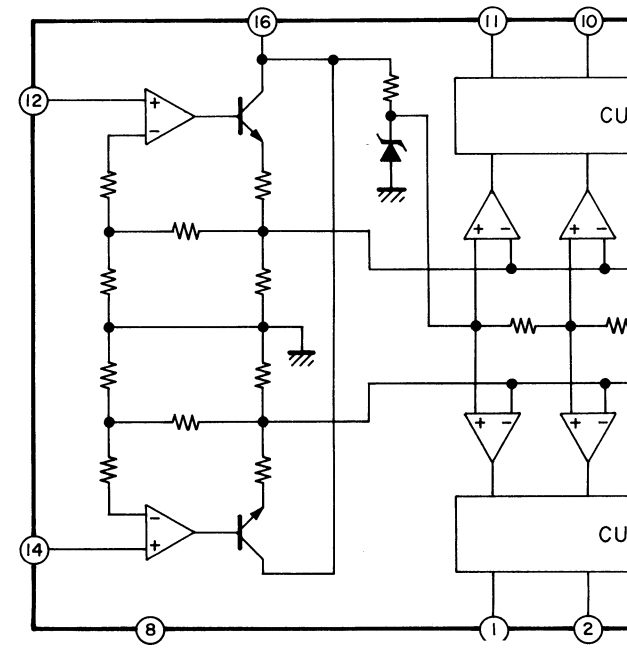
BA3416BL



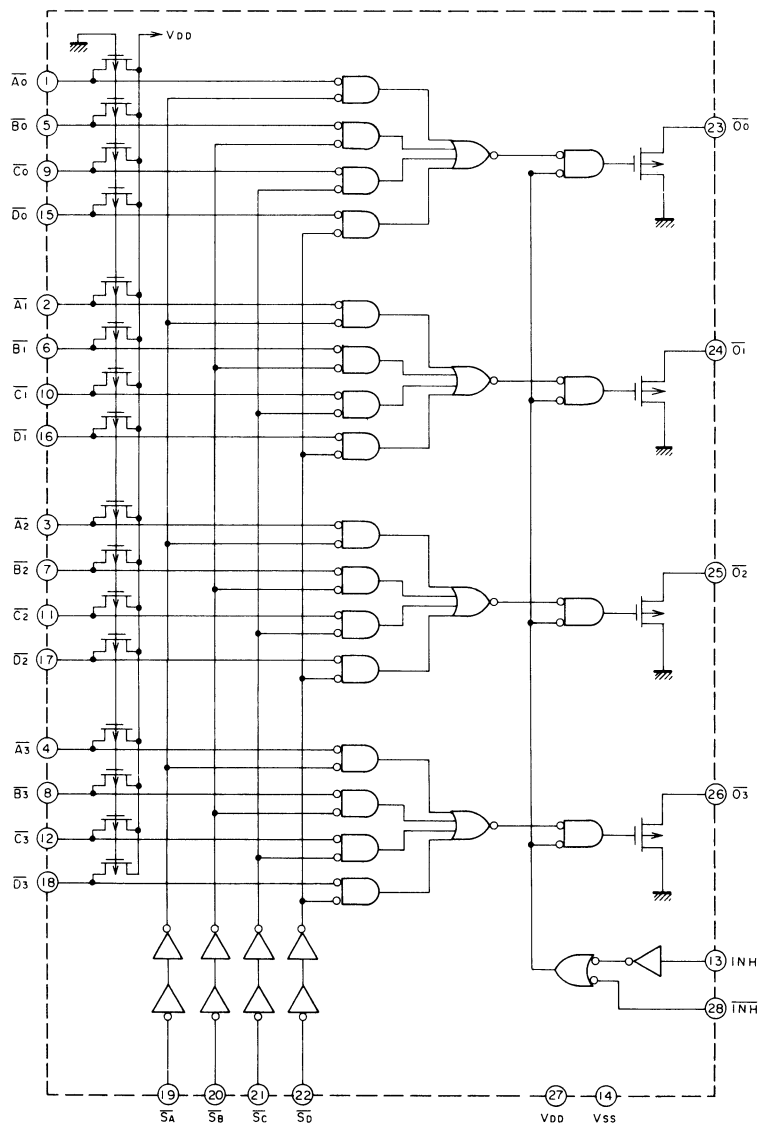
TAPE SELECT

⑰ PIN	⑱ PIN	OPERATING
L	L	TAPE B
L	H	TAPE A
H	L	TAPE B
H	H	UNDEFINITE

IR2E27A (LED Driver)



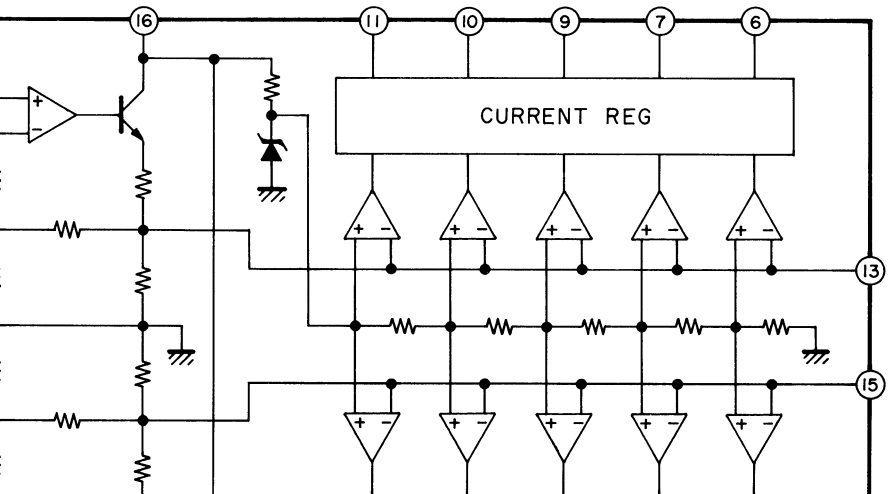
LC7800 (Input Port Expander)



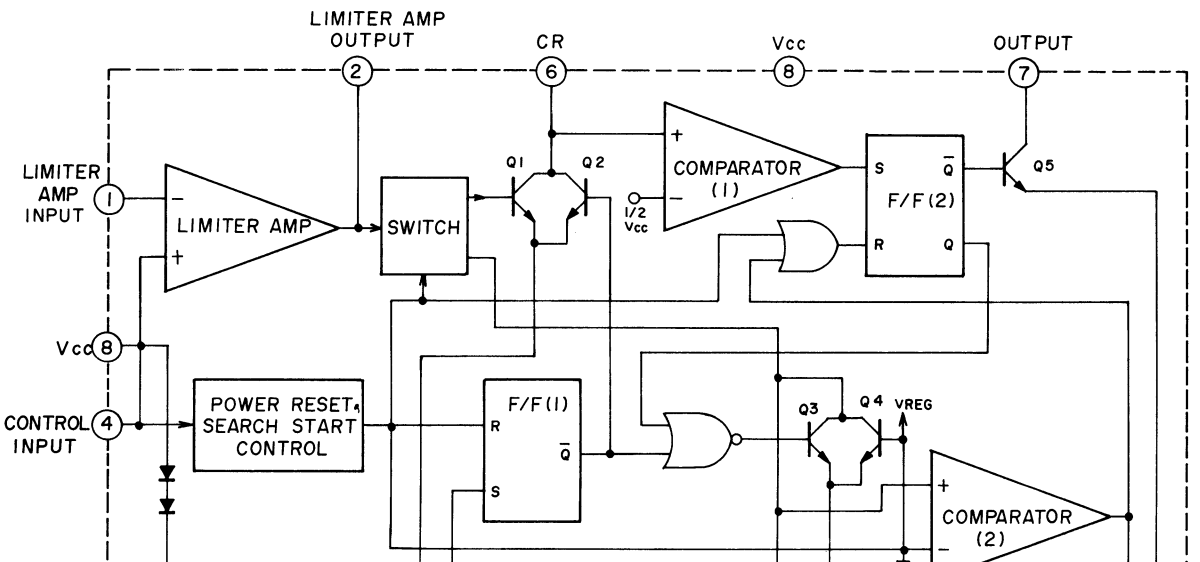
M50747-A27SP (System control MI-COM)

Pin No.	Symbol	I/O	Function
1	Vcc	+5v	
2	REV LAMP (TAPE II)	O	Control for reverse indicator. When reverse standby mode, this terminal indicator to light.
3	FWD LAMP O (TAPE II)	O	Control for forward indicator. When forward standby mode, this terminal indicator to light.
4	REV LAMP (TAPE I)	O	Control for reverse indicator. When reverse standby mode, this terminal indicator light.
5	FWD LAMP (TAPE I)	O	Control for forward indicator. When forward standby mode, this terminal indicator to light.
6	REC LAMP	O	Control for recording indicator. When recording mode, this terminal becc indicator to light.
7	X1 DUB	O	Control out for normal speed dubbing indic When normal speed dubbing system is "ON control normal speed indicator to light.
8	X2 DUB LAMP	O	Control out for double speed dubbing indic When double speed dubbing system is "ON control normal speed indicator to light.
9	BSPS LAMP	O	Control out for BSPS indicator lamp. When BSPS system is "ON", this terminal indicator to light.
10	REC NORM (TAPE II)		Not use
11	X1 PB 70u	O	Select control for playback equalizer. "L"= 70μS in Normal speed playback and
12	X2 PB 70u	O	Select control for playback equalizer in dou double speed playback.
13	X2 PB PEAK	O	Select control for playback peaking frequenc "H"= select normal speed playback peakin
14	REC EQ CrO_2	O	Select control for recording equalizer when "L"= CrO_2 tape recording equalizer is sele
15	REC EQ METAL	O	Select control for recording equalizer when "L"= CrO_2 tape recording equalizer is sele
16	REC EQ PEAK (Tape II)	O	Select control for recording equalizer when "L" Normal tape recording equalizer is sel
17	X1 REC PEAK	O	Select control for recording equalizer in no "L"= Select normal tape speed recording
18	X2 REC PEAK	O	Select control for recording peak frequency "H"= Select double tape speed recording
19	PB 1/2 SW	O	Select control for TAPE 1 or TAPE 2 play "H" = TAPE 1 playback.
20	DOLBY R/P SW	O	Select control for recording or playback in "H" = Playback, "L"= Recording.
21	OSC CONT.	O	Control for bias oscillator. "H"= Bias oscillator is "ON".
22	REC/PB SW	O	Select control for recording or playback mo "H"= Playback mode.
23	REMO-CON	I	Remote control data input.
24	REC MUTE (TAPE II)	O	Control for mute in recording mode. "H"= Recording mute.
25	PB MUTE	O	Control for mute in playback mode. "H"= Playback mute.
26	POWER OFF	I	Control input for power off mode. "L"= Power off.
27	CNVss		GND
28	RESET	I	Reset control. "L"= Reset

A (LED Driver)



M51143AL (Music Interval Detector)



MI-COM)

O	Function
5v	
O	Control for reverse indicator. When reverse standby mode, this terminal become to "H" and control reverse indicator to light.
O	Control for forward indicator. When forward standby mode, this terminal become to "H" and control forward indicator to light.
O	Control for reverse indicator. When reverse standby mode, this terminal become to "H" and control reverse indicator light.
O	Control for forward indicator. When forward standby mode, this terminal become to "H" and control forward indicator to light.
O	Control for recording indicator. When recording mode, this terminal become to "H" and control recording indicator to light.
O	Control out for normal speed dubbing indicator lamp. When normal speed dubbing system is "ON", this terminal become to "H" and control normal speed indicator to light.
O	Control out for double speed dubbing indicator lamp. When double speed dubbing system is "ON", this terminal become to "H" and control normal speed indicator to light.
O	Control out for BSPS indicator lamp. When BSPS system is "ON", this terminal become to "H" and control BSPS indicator to light.
	Not use
O	Select control for playback equalizer. "L"= 70μS in Normal speed playback and 120μS in double speed playback.
O	Select control for playback equalizer in double speed playback. "L" = 70μS in double speed playback.
O	Select control for playback peaking frequency in normal/double speed playback. "H"= select normal speed playback peaking frequency.
O	Select control for recording equalizer when using CrO_2 tape. "L"= CrO_2 tape recording equalizer is select.
O	Select control for recording equalizer when using CrO_2 tape. "L"= CrO_2 tape recording equalizer is selected.
O	Select control for recording equalizer when using normal tape. "L" Normal tape recording equalizer is selected.
O	Select control for recording equalizer in normal tape speed. "L"= Select normal tape speed recording equalizer.
O	Select control for recording peak frequency in normal or double tape speed. "H"= Select double tape speed recording peak frequency.
O	Select control for TAPE 1 or TAPE 2 playback. "H" = TAPE 1 playback.
O	Select control for recording or playback in dolby circuit. "H" = Playback, "L"= Recording.
O	Control for bias oscillator. "H"= Bias oscillator is "ON".
O	Select control for recording or playback mode. "H"= Playback mode.
	Remote control data input.
O	Control for mute in recording mode. "H"= Recording mute.
O	Control for mute in playback mode. "H"= Playback mute.
	Control input for power off mode. "L"= Power off.
	GND
	Reset control. "L"= Reset

Pin No.	Symbol	I/O	Function
29	Xin		X'tal for clock oscillator.
30	Xout		
31			Not in used.
32	Vss		GND
33	CONTI.REV	I	Select for reverse mode. "H"=Continuous reverse mode.
34	⮌ REV	I	Select control for reverse mode. "L"=⮌ reverse mode.
35	BOP	I	Detection input of non recording part. "L"=Non recording part.
36	SYNC REC	I	Input for synchro recording system control.
37	IN4	I	Data input from input port expander.
38	IN3	I	
39	IN2	I	
40	IN1	I	
41	DIGIT6	O	Digit output for input port expander.
42	DIGIT5	O	
43	DIGIT4	O	
44	DIGIT3	O	
45	DIGIT2	O	Digit output
46	DIGIT1	O	
47	I ONE WAY		GND
48	CrO_2/METAL (TAPE II)	I	Detection input of CrO_2 tape or METAL tape. "L"=CrO_2 tape.
49	AR REV (TAPE II)	I	Input of REV recording inhibition. "H"=Inhibit
50	AR FWD (TAPE II)	I	Input of FWD recording inhibition. "H"=Inhibit
51	FF/REW SW (TAPE II)	I	Mecha mode detection "L"=FF/REW
52	PLAY SW (TAPE II)	I	Detection input of head position. "H"=STOP position
53	REEL PULSE (TAPE II)	I	Input of reel pulse.
54	FF/REW SW (TAPE I)	I	Mecha mode detection "L"=FF/REW
55	PLAY SW (TAPE I)	I	Detection input of head position. "H"=STOP position
56	REEL PULSE (TAPE I)	I	Input of reel pulse.
57	FWD/$\overline{REV}$		GND
58	PLUNGER QT	O	Quick torque control pulse for plunger. "H"=Quick torque for plunger.
59	FF/REW PL (TAPE II)	O	Plunger on/off control output. "H"=Plunger on
60	PLUNGER (TAPE II)	O	Plunger on/off control output. "H"=Plunger on
61	FF/REW PL (TAPE I)	O	Plunger on/off control output. "H"=Plunger on
62	PLUNGER (TAPE I)	O	Plunger on/off control output. "H"=Plunger on
63	CM NOR/DOUB (TAPE I)	O	Speed select control for capstan motor. "H"=Normal speed, "L"=Double speed
64	CM NOR/DOUB (TAPE II)	O	Speed select control for capstan motor. "H"=Normal speed, "L"=Double speed